THE TECHNOLOGY RESOURCE FOR RESELLERS AUGUST 1998 Vol.4 No.8

Canadian Computer Wholesaler

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Large Displays are Poised for Big Sales

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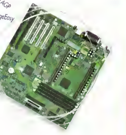

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Welcome

Ready for Digital Photos?

When it comes to digital photography, it seems the technological world is finally starting to gel

Digital cameras are offering higher resolutions at lower prices Near entry-level ink-jet printers are now capable of printing high-quality photographs something that just a couple of years ago was possible only on very expensive, vertical-market-oriented products As computers have become increasingly powerful and entry-level monitors bigger, manipulating images at the desktop has become eminently practical (See this month's Lab Test, page 30, for an in-depth review of the latest 17-inch monitors on the market)

Moreover, improvements in compression and bandwidth mean large photos can travel with ease electronically, whether via Web pages or e-mail (As little as a year ago, I was still regularly calling my ISP to delete too-large e-mails)

I've had fun playing around this issue with Epson's PhotoPC 600 digital camera, and in fact, some of those efforts even made their way into the magazine (See page 20) Reviewing photos as soon as they're taken is extremely convenient, as is the option to discard them and reuse the space (There's one point over film!) Moreover, the immediacy of e-mailing photos back to the office appeals not only to journalism, but to all sorts of deadline-sensitive businesses, like real estate and insurance, for example

Of course, consumer interest is skyrocketing I decided to send a photo to my mother electronically, as she just recently procured an e-mail account To my amusement, my father telephoned me to exclaim "I saw you on the Internet!"

At Comdex/Canada in Toronto last month, my conviction that the "time has come" for digital photographs strengthened. The slew of cameras on display included the FujiFilm MX-700 1 5 mega-pixel offering (see page 11) Along with high-quality resolution in an extremely small package, this product offered an optional floppy disk-shaped adapter that holds the MX-700's wafer-thin storage card To load the photos, the "floppy disk" slides into the PC's floppy drive This sort of innovation is necessary to ease consumer adoption Messing about with cables at the back of systems is still no picnic for the average user Anything easier and more intuitive deserves accolades And the idea of connecting the camera directly to the printer (as is possible with various Epson products for example) may be of interest to some consumers who don't always want to bother with uploading images to the computer

On the printing front, watch out for the Lexmark 3200 color ink-jet printer, with 1,200 by 1,200 dpi resolution, starting at a mere $279 Entry-level printer buyers will be able to afford a product that prints excellent-quality photographs (Speed is up to 6 ppm in black and 2 5 ppm in color, the company says)

Of course, glossy photo-quality paper is expensive But your customers who decide to go digital will have the advantage of viewing each photo before printing it, as well as cropping, modifying, lightening or darkening each image for optimal results before it goes down on paper And "reprints" are quick and easy

For *CCW*'s product picks at Comdex/Canada, be sure to check out "*Recognizing 'Innovation' at Comdex/Canada*," page 18

While at Comdex/Canada, I had a chance to speak with Michael Cowpland CEO of Ottawa's Corel Corp (For a perspective on Corel today, see "*Hardball Season*," page 16) After the recent cuts in Utah, Cowpland says Corel is in a good cash position and 'ready to show a profit in the fourth quarter "

Looking towards the future, the core focuses for the company will be CorelDraw, the Corel WordPerfect Office suite, Ventura, and emerging technologies like Java and Linux, says Cowpland (See "*Corel launches Linux network computer*," page 60)

Incidentally, if the crowds at the Corel booth were any indication, there is still a lot of interest and goodwill towards that company

Despite recent hardships Corel deserves credit for a pioneering spirit that has seen the Canadian company take risks with new technologies and directions over the years Indeed, Cowpland said he'd like to see his own legacy as "creating companies that are dynamic and effective, and creating great products for customers"

It's an admirable goal CCW

Grace Casselman
Editor

Canadian Computer Wholesaler

Publisher J. David Ritter
Associate Publishers Judy Prange
Hari Singh Khalsa
Editor Grace Casselman
(gracec@netcom.ca)
Assistant Editor Jeff Evans
(jeff@tcpon.com)
Lab Test Editor Sean Carruthers
(sean@tcp.ca)
Contributing Writers Graeme Bennett
Douglas Gray
John Hamm
Stephen Ibaraki
David Tanaka
Paul Weinberg
Peter Wolchak
Alan Zisman
Art Director Sherly Ho
Production Staff Karin Hartwig
Jana Kolar
Regional Sales Manager Jamie Leighton
(jamie@tcp.ca)
Controller Linda Lovegrove
Accounting Farida Aini
Circulation Kim Jewison
Founders Kent Liqun Chen
Li Ding

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Toronto Office
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Tel: (416) 535-8404
Fax: (416) 588-8574

Vancouver Office
Suite 503-425 Carrall St.
Vancouver, B.C. Canada V6B 6E3
Tel (604) 608-2688
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Taipei Office
PRISCO
Tel: 886-2-2711-4833
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Web Site *http://www.ccwmag.com*

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Celeron Article Enlightening

I am e-mailing to say how much I liked (Alan Zisman's) article on the Celeron chip in the June issue (page 46) of *Canadian Computer Wholesaler*.

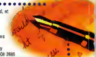
I consider myself to be relatively up to snuff with technology and I am looking for a new PC for my father. When I came across the name of the Celeron chip at several computer stores alongside several Pentium IIs, I was tempted to buy it in keeping with the maxim: newer = better. Which is, of course, false.

I decided to investigate the Celeron chip a little more before I bought it.

Looking through my recent copies of *Byte* and *PC Computing* I could not find much indicating what improvements Celeron had to offer. This applied to articles and advertisements.

Am I correct in thinking that if the computer magazines remain silent about a product, they disapprove?

Jeffrey Lenzner
Business analyst
Indus International Canada Inc.
Richmond, B.C.,
jlenzner@home.com



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Letters To The Editor

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We reserve the right to edit your contributions for length and clarity.

Please write to The Editor via e-mail at ccw@tcp.ca or fax (604) 608-2686.

Grinning at the Celeron

The June issue of *CCW* landed in my "in-box" and I was reading through Alan Zisman's Tech Talk article on the Celeron (page 46). I have to admit Intel's Celeron "tactic" has me grinning. This is vintage Intel. It takes me back to the 486SX — remember that?

Many 386s — especially AMD versions — outperformed the infamous "broken" Intel 486. Going back even farther into the distant past I remember the 386SX-16. This was the entry level CPU that would get you up and running on the new Windows 3.1. We didn't do those, just as we will not "do the Celeron."

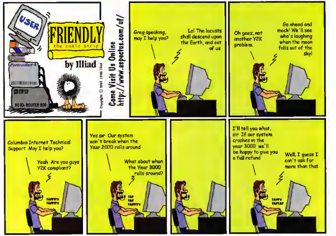
What is even more intriguing about the Celeron roll-out is the problem the "case-less" Celeron cartridge is having fitting into Slot 1. Slot 1 was designed to hold a Pentium II that has a case. Because the case is removed to reduce production costs, it flops around in the slot.

I've seen reports that there will be a modified Slot 1 on the Celeron motherboards. Ah, two versions of the Slot 1? Yes, and a dead slot too! The performance of the Slot is not up to snuff. I expect that Slot 2 due out this fall will get it right, but talk about product confusion. Slot 2 P-2 cartridges will not work in Slot 1 systems.

I ask, could Shakespeare do any better?

Douglas Bellamy,
Consultant,
BreakAway Business Solutions
Courtenay, B.C.

Quotable: **"If you can touch it, there's no money in it."**
— Greg Michetti, president of Michetti & Associates, in Edmonton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Yeah. Are you guys Y2K compliant?
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What about when the Year 3000 rolls around?
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INDUSTRY FLASH

Cabletron adds software unit

(NB) — Cabletron has unveiled plans to launch a new software solutions and services organization. Terry Seymour, head of global sales and marketing for the new software arm, described the new group as a "vertical process" that will work alongside Cabletron's existing horizontal business units, as opposed to being either a spin off or a separate business unit, as rumored in the industry recently.

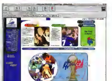
Cabletron's new software organization will incorporate a separate, dedicated sales force to be overseen by Seymour. Other elements will include engineering and operations staff, drawn in large measure from existing staff at Cabletron, along with expertise in professional services, to be obtained in part through partnerships with VARs, systems integrators and third-party vendors.

Services to be offered will include systems integration, consulting and training, he said.

World Cup site saw one billion hits

After just 27 days, the 1998 World Cup Web site reported one billion hits. Moreover, with 70 million hits on a single day (June 30) the site claimed to shatter all previous sporting records.

The official World Cup Web site — *http://www.france98.com* — was designed and developed by EDS. Hits were received from 170 countries around the globe, and fans from 53 countries purchased merchandise from the World Cup on line store. The top 10 countries in order of shipment quantities as of June 26 were: the U.S., the U.K., France, Japan, Canada, Brazil, Mexico, Hong Kong, Switzerland and Germany.



Windows 98 counterfeiter arrested

Microsoft Corp. announced the breakup of a counterfeiting operation in Anaheim, Calif., just a few weeks after the launch of Windows 98.

According to Microsoft, on July 8, Anaheim police arrested Donald Goldberg in a parking lot after he allegedly delivered more than 800 copies of counterfeit Windows 98 to an Anaheim police officer in a previously arranged transaction. The suspects in this case allegedly took out ads in local sales publications, using pagers to arrange locations for the delivery of the pirated software.

Following the arrest of Goldberg, Microsoft said Anaheim police searched the business location of Auto Scape Productions, seizing counterfeiting evidence regarding Microsoft, Adobe, Symantec and Autodesk software. Goldberg was charged under Section 350 of the California Penal Code: Theft of Trademarked or Copyrighted Material. Bail was set at $1,000.

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Apple files warranty fraud suit

Apple Computer Inc. filed a fraud suit in the U.S. District Court in San Jose, Calif., against four companies previously authorized to provide warranty service and repairs on Apple hardware and peripheral equipment.

The suit contends that four former Apple Service Providers combined to defraud Apple of payment for service and repair work that was never performed, and for shipping replacement parts based upon false claims.

Apple's suit seeks to recover more than US$600,000 in money paid and parts shipped to these Service Providers based on false pretenses. The Service Providers named in the suit are: IRASYS, IRA Systems, Inc., Integrated Concepts Solutions and PC Systems Design Corp. Two individuals, Fred Ladjavardi and Sean Ledge, were also named as alleged principals of the defendant companies.

Tech Data sells Macrotron AG to Ingram Micro

Tech Data Corp. is selling its interest in the company's Munich-based subsidiary, Macrotron AG, to Santa Ana, Calif.-based Ingram Micro Inc. for about US$100 million in cash.

The sale, which is subject to regulatory approvals, board approval and other terms and conditions, was contingent upon Tech Data completing its acquisition of a majority interest in Munich-based Computer 2000 AG. The planned sale of Macrotron AG to Ingram Micro was expected to be completed by July 31.

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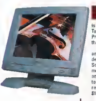
Free security training for resellers

Markham, Ont.-based Network Associates is offering free copies of its security vulnerability audit tool — CyberCop Scanner, to resellers and consultants across Canada.

The program will include free training on the effective use of CyberCop Scanner (formerly called Ballista) to identify security weaknesses at customer sites. Once a customer's security requirements have been accurately determined, participating resellers will be able to offer Network Associates' suite of enterprise network security software solutions, called Net Tools Secure.

Through this program qualified consultants and resellers will be trained and authorized to use CyberCop Scanner at no cost for 90 days, to evaluate network vulnerability at client sites.



Trade in that CRT?

Is it time for an LCD monitor? Well, Sceptre Technologies Inc.'s new "Summer Trade-In Program" will let current CRT users upgrade their unit to a 14.5 inch LCD flat panel.

Until Sept. 30, customers can purchase an FT15 flat panel monitor at an authorized dealer, provide proof of purchase to Sceptre, and then send in their current CRT monitor for a rebate. Actual rebate dollar amounts will vary depending on the monitor's make, age, and condition upon receipt, but most will range from $60 to $180, says Sceptre.

The CRT monitor must be 17 inches or larger and in working condition. CCW

Contact: The Editor

LETTERS

Canadian Computer Wholesaler welcomes your opinions on current issues in the market, plus your feedback on our publication.

NEWS

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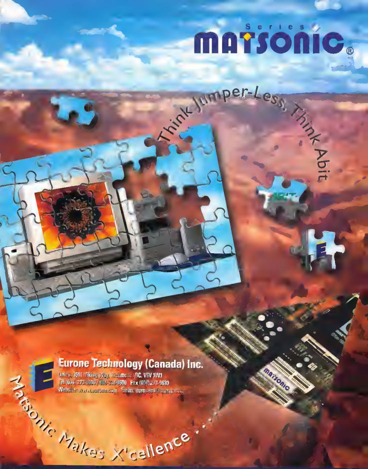
Please write
The Editor, Canadian Computer Wholesaler
200 – 99 Atlantic Ave., Toronto, Ontario M6K 3J8
Fax (416) 588 8574
E mail ccw@tcp.ca

Editor: Grace Casselman
Call (403) 262 7890
Fax (403) 262 7892
E-mail: gracec@netcom.ca

Associate Editor: Jeff Evans
Call (416) 535-8404
Fax. (416) 588-8574
E-mail: jeff@tcpon.com

Contact: Sean Carruthers
Call (416) 535-8404
Fax (416) 588-8574
E-mail sean@tcp.ca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Microsoft Canada boosts value-added partner support

Microsoft Canada Co. says it is strengthening support for its value-added partners (VAPs) with the launch of the Direct Access Web site and the nationwide expansion of existing program elements such as quarterly briefings, newsletters, training sessions and workshops.

Microsoft Direct Access is designed to let resellers, consultants and other value-added service providers take advantage of opportunities to increase revenue, better meet customers' needs and stay on top of technology.

The site (*http://www.microsoft.com/canada/directaccess*) provides technical product information and resources, business development opportunity articles, sales materials and news highlights.

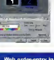
Windows 98: Will you take USB with that?

The official introduction of Microsoft Windows 98 in Canada on June 25 was a relatively low-key affair, especially when compared to the planetary scale ballyhoo that accompanied the launch of Windows 95 nearly three years earlier.

There were some "Midnight Madness" events at various retail computer outlets after midnight, and PCs with Windows 98 preloaded were available on some retail store shelves almost immediately, but the immediate direct effect of Windows 98 on PC sales numbers will be marginal. The latest version of Windows contains many new features and improvements over Windows 95, but this is not a revolutionary step forward. In practice, retailers will simply sell a high percentage of PCs with Windows 98 substituted for Windows 95. For resellers, there will likely be some upgrade business as owners of PCs currently running Windows 95 spend about $140 to buy the upgrade version of Windows 98 (a full Windows 98 package costs about $260) plus $69.95 to buy Windows Plus! 98, a utility and games supplement to the basic operating system. However, Windows 98 is not likely to be adopted on a large scale by the business computing community, who are still integrating Windows 95 into their operations in many cases, and who may prefer to jump to Windows NT in the future. The main markets for Windows 98, besides new computer buyers, are likely to be games and Internet enthusiasts, for whom Windows 98 does offer significant benefits.

The main opportunity for resellers in Windows 98 is more subtle: new software and hardware products are made possible or enhanced with Windows 98, plus ancillary products and services such as Windows 98 books and training tapes. A significant number of new Universal Serial Bus (USB) products, including monitors, printers, mice, digital cameras, scanners and keyboards, are expected to be released this fall to take advantage of Windows 98's support for USB. As well, 3D games, interactive on-line services and interactive TV all benefit from new features present in Windows 98.

Although Microsoft touts Windows 98's improved usability, there is apparently still a strong need for help in figuring it out. In fact, Windows 98 has spawned its own little publishing industry of "help" and "how-to" books. The market is now flooded with them. Prima Publishing (*http://www.primapublishing.com*) has released *The Essential Windows 98 Book* ($34.95), *Learn Windows 98 in a Weekend* ($27.95), and *Windows 98 Fast and Easy* ($23.95). IDG Books (*http://www.idgbooks.com*) has no fewer than 18 Windows 98 titles available.



Neil Froggett, Canadian product marketing manager for Windows 98, stated that Microsoft expects the adoption rate of Windows 98 to parallel that of Windows 95, which was the fastest selling software title in history. The rapid development of a Windows 98 installed base in Canada will be the prerequisite for retailers to upsell customers on the cornucopia of new products due to appear in the next year and a half.

Awaiting Web-enabled pay phones?

(NB) — Internet-enabled pay phones and terminals will be marketed in India by Toronto-based King Products through a reseller agreement recently signed with HDM International Inc., said Anthony Siregar, King's vice-president for international business development.

The partnership with HDM will provide King with access to telecom and corporate extranet customers in India, particularly in the two metropolitan cities of New Delhi, India's capital, and Bombay, the country's major business centre.

Siregar described the installations as "elegant," saying they will be situated in public-access environments such as airports and hotels and will provide instant Internet access to users via a "smart card" or "electronic purse."

New Delhi and Bombay have access to large digital telephone ISDN (integrated services digital network) networks, which are capable of carrying voice, data and Internet-based services such as videoconferencing, audio-enabled Internet and e-commerce transactions. Siregar said he expects "a few thousand" installations in the two cities.

Disclose the Y2K linen!

(NB) — The Canadian Institute of Chartered Accountants (CICA) has released accounting and auditing guidelines on the Year 2000 issue, making Canada the first G7 country to require financial statement disclosures relating to Millennium Bug preparedness.

Michael H. Rayner, FCA, CICA president and member of Industry Canada's Task Force Year 2000, said that under authority from the Canadian Accounting Standards Board, all companies, both public and private, are now required in their financial statements to highlight the fact that they may experience problems relating to what is known as the Y2K Bug, which is expected to create some computer failures as we enter the new millennium.

"The Year 2000 issue poses an immediate and significant challenge to businesses around the world. Through appropriate financial statement disclosure, these new guidelines will ensure that the public investor is aware of the issue," Rayner said.

The accounting guideline provides a balanced approach to disclosures about the Year 2000 issue. It discusses the nature and extent of Y2K information that an entity should disclose, and the most appropriate vehicle for doing so.

Normally, there is a minimum requirement for financial statements to disclose the uncertainty around the Y2K issue in future financial results. Such disclosure, normally beyond the scope of financial statements, is required because of the pervasiveness of the Millennium Bug issue, its potential to cause significant systems failures, and the fact that it will impact all entities at approximately the same time.

However, a more precise disclosure statement is required if management determines that the entity's ability to continue is jeopardized because of non-compliance to Y2K. In that event, financial statements must provide explicit disclosure of the problem.

Rayner stressed that the requirement applies only to companies filing financial statements under the terms of the General Agreement on Trade and Tariff (GATT), but added that banks, stock exchanges and other financial institutions may soon also require similar disclosures.

Web order-entry in swing at Tech Data

Tech Data Canada Inc. says order-entry on the company Web site (*http://www.techdata.com*) is now in full-scale operation.

Productivity tools at the site include a quote-building feature to let resellers do on-line purchase planning (and save the information in the system for five days), plus a promotions feature to facilitate selection of vendor pricing promotions, says the company. There is free ground shipping on all orders placed via the Web.

Resellers can search Tech Data's "electronic catalogue" using product type, product description, product category, manufacturer, manufacturer part number, Tech Data part number, product price or product status. Detailed technical specifications are available on more than 25,000 products. CCW

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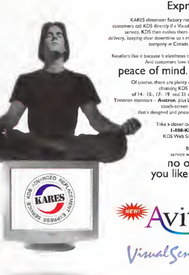

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Hardball Season?

It's blood sports when the major vendors ploy boll these doys.

by Jeff Evans

In sports, as the saying goes, "winning isn't the main thing, it's the only thing."

Yet even the driven competitiveness and Darwinian "survival of the fittest" mentality of pro sports pales in comparison to the computer industry For resellers who've spent years in the technology trenches, some rather savage recent announcements, of major brands' layoffs, restructuring, and plans for even greater automation in the manufacturing, distributing and reselling process will come as no surprise.

The technology business is ruthless towards its own young, driving them mercilessly and occasionally eating them or abandoning them on the roadside June was a particularly cruel month.

Compaq Canada gets more...Compact

Times can be hard even for those winning the race — at least for their employees and perhaps their business partners. Compaq Canada Inc., despite record sales and growth, announced the layoff of 1,100 Canadian employees, a full third of its payroll in this country. Up to a fifth of the 2,200 survivors will be laid off in the next few months, according to Peter Ciceri, Compaq Canada's president and managing director The move is part of Compaq's global integration of Digital Equipment Corporation's worldwide operations into Compaq.

Compaq Canada management had been very tight-lipped about the fate of Digital's extensive Canadian manufacturing operations in Kanata, Ont., until they were ready to make the chop

When the first axe blow fell on June 30, it was swift Compaq's statements included phrases such as: "The layoff of employees today is really the result of the merger and having excess capacity between Digital and Compaq ..." and "The merger is about growth and opportunity," and "This is a new world"

The New World

The bottom line, though, is , the bottom line. The fact that Compaq is growing rapidly, and is highly profitable doesn't mean than any employee's job is safe. In the global economic picture, whatever management decides it should do to maximize the profits of its shareholders is what will be done, regardless of local employee considerations.

If Compaq's restructuring of Digital's operations results in the complete shutdown of Digital's manufacturing facilities in Canada, that will mean the loss of a billion-dollar-a-year export business (most of the Digital production from its Kanata plant was for export) That's a big hit against the entire Canadian economy The Kanata facility and its remaining 200 or so employees will become a final assembly and shipping facility for the Canadian market, according to Ciceri. Manufacturing operations, such as the creation of Alpha processor motherboards, will be moved to Scotland, which offers special investment incentives such as tax breaks to new investors.

Corel Bites the Bullet

In a similar vein, Corel announced a major bloodletting with the effective elimination of its Utah WordPerfect operation and the loss of 530 American jobs (a fraction of those losses will be offset by WordPerfect related jobs created in Ottawa and Ireland)

Corel is continuing to lose market share and money. But for those being laid off in this latest sad chapter in WordPerfect's decline, the story is international takeovers, downsizing and good-bye jobs.

Sympathy for the Devil

About a week before these two events, Michael Dell, the founder of Dell Computer, had been in Toronto, announcing the runaway success of Dell's direct PC sales model around the world, but especially here in Canada. Mention of the name Dell sends a chill up the spine of many resellers, since the Dell sales model entirely eliminates the customary "middleman" in retail PC sales. Dell's success has made all the other PC name brands look at their channel strategies with a cold eye, searching for ways to further cut costs

Most major PC makers are trying to jump on the Internet commerce bandwagon, but the dilemma they face is "channel conflict" How can Compaq, for example, offer the best discounted price on a PC at its Web site, without killing walk-in sales to its channel partner stores? How can anyone eliminate the cost of a reseller channel without eliminating the reseller? Michael Dell is dismissive of his competitors' hybrid "build to order" programs that are part direct sales, part retail sales.

It's ironic that the most characteristic features of the computer age — electronic financial, database and inventory systems, e-commerce, rapid innovation and obsolescence, Internet-oriented marketing and selling — seem to bite hardest at the people who create and sell computer technology. It may not be fair, but that's the way the business works Those who want to survive will have to pay attention to the perils and the opportunities of a rapidly shifting reselling landscape.

Jeff Evans is Associate Editor of Canadian Computer Wholesaler He can be reached at jeff@tcpon.com.

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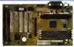

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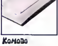

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Recognizing "Innovation" at Comdex/Canada

by CCW Staff

Big tradeshows tend to be a great time to catch up with customers and colleagues, while catching a glimpse of future technologies and products. Certainly July's Comdex/Canada in Toronto was no exception as more than 60,000 resellers and computer professionals turned out at the show

Eurocom's Mark Bialic and CCP's David Ritter

There weren't many earth-shattering surprise announcements, but the latest rash of products on display were typically better, smaller and faster, with notable usability enhancements At that show, the editors of *Canadian Computer Wholesaler* magazine and Canada Computer Paper Inc got together to hand out "Innovation" awards Those went to

- **Panasonic's LF-D101 internal DVD-RAM drive,** which can write 5 2GB or 2 6GB of data Suggested retail price is $1,149, and the media costs $59 for 5 2GB, or $35 for 2 6GB
- **Oracle Lite** for its US$90 3Com Palm version which goes into beta in August (as the Conduit Development Kit) allowing users to synchronize data on their Palm products with corporate Oracle databases
- **Epson's Photo 700 printer**, which retails for $399, offering 1,400 by 720 dpi printing, for high-quality color photos, while also handling home or small office black printing needs The Epson camera will also connect directly to the printer
- **Creative Lab's SoundBlaster Live audio card,** for $300, which demonstrates the company's new "environmental audio" technology It incorporates the EMU10K1 audio processor and recreates sounds, simulating different sources and acoustics providing audio cues for distance, room size and reverberation
- **Pelican Inc.'s Invisible LCD screen** on Sceptre OEMed notebooks The screen is basically blank to the passerby, unless viewed through special eyeglasses calibrated to that machine (No, you can't view your neighbor's computer even if you both have Pelican systems) The "invisible" feature adds about $350 to a $3 000 notebook The glasses are also available in prescription versions The company is aiming the technology (which garnered significant attention at the show) at security-conscious market segments, such as government Using a special "film," the notebook can also be converted back to a regular view
- **The Panasonic ToughBook 71** The company was performing drop-tests on its line of ruggedized ToughBook notebooks, which are encased in magnesium alloy and incorporate gel around components like the hard drive for added shock protection The 266MHz Pentium II-based ToughBook 71 has a street price of $4,999
- **The latest digital camera from FujiFilm — the MX-700** is one of the tiniest consumer cameras It is truly shirt-pocket-sized and weighs only a few ounces It's extremely easy to use, with a dial-shaped mode selection wheel that is very simple and intuitive It also offers high resolutions of up to 1 5 million pixels (1,280 by 1,024 pixels), for $949 (Note the camera has limited battery life if the user runs it from its internal batteries, especially if you use the two-inch color LCD video preview screen Also, to store large numbers of pictures extra memory cards are needed, pushing the cost of the system well over the $1 000 mark) The tiny wafer thin memory cards can slide into an innovative floppy-disk-like case, and be read via a computer's floppy drive
- **The Olympus D1000 digital voice recorder** now comes equipped with a customized version of ViaVoice That means users can record memos or meetings and then download that data into a computer where it is processed and translated to text CCW

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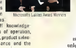
CCW Award Winner

Comdex/Canada was also an opportunity for the winners of Canadian Computer Wholesaler's Technical Excellence Awards for Canadians to pick up their awards (Please see *CCW* July, page 20, for details.) Congratulations again, to all our worthy winners.

Here, Eurocom Corp president Mark Bialic hams it up with Canada Computer Paper Inc publisher David Ritter Bialic's strategy for success "Yesterday is past. Today is past. Think about tomorrow"

Microsoft Canada Co., as part of its Galileo awards ceremony, recognized these three partners, during Comdex/Canada Ron Hu, president of Inly Systems International Ltd., received the Microsoft Canada Northern Lights Awards for his leadership on the anti-piracy front. David Nail, president of Nail The Computer Store won the 1998 Galileo Award in the Small Chain Category Mike Gardner, president of CompuSmart Canada, picked up the prize in both the Large Chain Category and the Single Store Category Stores were judged on such attributes as professional staff knowledgeable staff hours of operation, customer service, product selection store ambiance and the overall shopping experience


Microsoft's Galileo Award Winners

Get ready to say goodbye to CD-R

by Graeme Bennett

An Analysis of Two of the Winners of Innovation '98 Technical Excellence Awards

At the Comdex/Canada tradeshow in Toronto, the editors of *Canadian Computer Wholesaler* and Canada Computer Paper Inc. convened to award a select group of products our (hopefully) prestigious Innovation '98 Technical Excellence awards.

I want to discuss some of the details of what it takes to be innovative in multimedia audio and high-capacity storage this year. The Creative Labs SoundBlaster Live, announced back at Fall/Comdex in Las Vegas, exploits (better than any previous Creative Labs product) the audio hardware expertise the company bought when it acquired E-mu Systems Inc. back in February 1993, and Ensoniq Corp. this past January. Both E-mu and Ensoniq still hold important positions in the pro music market place with their dedicated synthesizers and sampler modules and keyboards.

Sound Blaster Live, which should ship in September, does away with the "eight-bit playback/16-bit record" limitations of the AWE64's "full duplex" operation, which kept it from effectively addressing the home and prosumer musician markets. As well, the company says the waveforms generated by the system's EMU10K1 digital signal processor are ideally suited for speech recognition. At this writing, a bundling deal that would see the card — PCI, by the way — bundled with continuous-speech recognition software seems likely. But who are we kidding? Gamers are destined to buy the lion's share of this card's prodigious production run, fueled by the company's dominant market share (the company's multimedia/sound boards are found in an estimated 60 per cent of systems sold to date) and the allure of what the company calls "Environmental Audio." Unlike some competing 3-D audio specifications that operate on the principle known as HRTF (head-related transfer function) — in essence, an audio model of a dummy's head with microphones in its ears — Creative's system exploits yet another of its recent acquisitions, the high-quality speakers from Cambridge Soundworks. In other words, the company is hoping that a system with more than two speakers (up to five plus a subwoofer in the case of Dolby Digital 5.1, the standard for DVD) will soon become the norm. Even if it doesn't, support in games is likely to catch on as games developers take advantage of the company's Environmental Audio Extensions application programming interface to develop games that exploit the system's acoustic modeling extensions to Microsoft's DirectX/DirectSound.

Although space doesn't permit a full description here (see *http://www.soundblaster.com*), the results sound as if they originate from different sources, complete with the acoustics — such as reverberation — associated with a specific room, chamber, cave, tunnel or pit of doom. Customers may or may not care that the DSP cranks out 1,000 MIPS of raw processing power but it certainly demos well. (Combine it with a Voodoo2 graphics subsystem, a few good games and watch out!) This wholly deserves our technical excellence plaudits.

Indeed, Creative Labs is making hay with its DVD drives, as well. Market analysts report the company's PC-DVD drives now account for 60 per cent of all units sold to date, and the aggressive $699 price on its newest DVD-RAM (rewriteable) drive — including an Adaptec AVA2902I SCSI-2 Adapter Card — seems destined to further beef up those numbers.

However, we elected to vote for Panasonic's somewhat more expensive DVD-RAM drive as our Technical Excellence choice. Why? One word: Innovation. Panasonic owns 620 patents in Japan for its RVD-RAM drive (in Canada, the U.S. and other countries, 120 patents have either been granted or are pending approval). Interestingly, when we checked Creative Labs' Web site for the specs on its DVD-RAM drive, it implied that it could only write DVD-RAM Type 1. In fact, the company's engineers assure us that it, like the Panasonic unit, can also write Type 2 (removable disk) 2.6GB DVD-RAM and dual-phase PD disks. Both units read standard DVD-ROM disks at 2X speeds (2,770KB/sec.) and record up to 5.2GB at 1X speeds (1,385 KB/sec.). Panasonic says its forthcoming 4X DVD-ROM drives (due this fall) will be able to read these Type 2 disks directly. We expect most other manufacturers to follow suit. CCW

Graeme Bennett is Editorial Director at Canada Computer Paper Inc. He can be reached at graeme@tcp.ca

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5.2GB disks (the equivalent of 3,811 floppy disks) run about $59; a 2.6GB disk is about $35. Those looking for economical storage will love the cost per megabyte of storage on these babies: about one cent. Get ready to say goodbye to CD-R!

Web Links:
Creative Labs DVD-RAM:
http://www.soundblaster.com/mmuk/dvdram/
Environmental Audio:
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Panasonic DVD-RAM:
http://www.panasonic.ca/

Why the Paperless Office is a Myth, and Other Xerox Research

by Grace Casselman

One of the XRCE buildings in Grenoble is informally called 'The Chateau'

Why is the paperless office a myth?

That's something Xerox Corp., known for its photocopiers and printers, has a vested interest in understanding. Indeed, as a veritable bastion of printing and paper-handling expertise, the company is interested in all aspects of the future of paper.

"The paperless office has always been a myth, and it's always going to be a myth. But why?" queried Bob Anderson, director of Xerox Research Centre Europe (XRCE)'s Cambridge Lab. To answer that question, XRCE studies what it calls "the affordances of paper." Those are basically the qualities and possibilities associated with paper, including the ability to write on it, read it, tilt it on an angle, fold it, and put it in a pocket.

Anderson said Xerox's field studies show that typical paper-based activities in corporations include: creating documents, thinking and planning, reading for understanding, reviewing documents, collaborative activities and document delivery. People want to put paper reports "into the hands" of others. "Paper plays a vital role in the ritual of exchange."

Anderson said the problem with reading on-line documents has to do with the lack of ability to stick their fingers in the "pages" and make cross-references. Yet, the use of paper is changing. He said paper is increasingly less important for such applications as search and retrieval, long-term storage of documents, analysis and archiving of data, and large-scale dissemination and transmission of documents.

Anderson predicts digital cameras will become increasing popular on desktops and in the near future will commonly act as scanning devices for paper documents.

In California, Xerox PARC is working on alternative types of paper and new uses for the medium. For example, a technology called "data glyphs" sees images on paper made up of tiny symbols virtually imperceptible to the naked eye. The concept is similar to a barcode, but allowing for the transmission of a great deal more data. That means researchers can embed large amounts of information in a photo or logo, for example. When the document is scanned, software translates the glyph to text on-screen.

A variation on the concept is "digital watermarking" which can be applied to photographs, for example. That watermark could contain copyright information about an image, that wouldn't be lost, even in subsequent copies.

According to Christer Fernstrom, coordination technologies area manager for Xerox, the company thinks of documents as "containers with content." And he defined "knowledge management" as: "A coordinated effort to give organizations the ability to capture, create, manipulate, maintain and exchange structured and unstructured knowledge." Moreover, knowledge management involves creating and maintaining a "working and learning environment that fosters the continuous creation, aggregation, use and reuse of both organizational and personal knowledge," he said.

Bob Anderson asks "Why is the paperless office a myth?"

Xerox has a number of research projects underway on this front, including Knowledge Workers, which will perform sophisticated queries on selected information sources on the Internet and corporate intranet. Text Mining processes the text, discarding irrelevant words such as common nouns, and classifies text, according to genre and subject. Meanwhile, another research project — "Knowledge Pump" involves evaluations and recommendations from a peer group on information sources. Xerox is currently running a test within its own facility in Grenoble, where coworkers share, evaluate and rank shared information. The eventual idea is a marketable product that would see groups on the Internet or intranet paying for information, but being encouraged by "rebates" depending on their level of participation, and moreover on how useful they found that information. The system has intelligence built in, and will "offer" more of the type of information the user indicates is useful, and will display recommendations from people the user has agreed with in the past.

Other knowledge management technology derived from Xerox research includes the Hyperbolic Tree from a Xerox company called Inxight Software. It involves sophisticated mapping out of data sources, allowing for visualization of that data. Of note, that technology is included, for example, in the Web view of SoftQuad's HotMetal Pro. [illegible] of the product are available from Inxight.

Xerox's new Multilingual Suite line of products has just been introduced to the market and was the result of research at XRCE. It currently supports English, French, Dutch, German, Italian, Portuguese and Spanish.

- Multilingual Assistant (US$160) is a dictionary that is used with an electronic document such as a product manual and the user can look up possible definitions of words and phrases in order of likelihood. This could be used, for example, by people in other countries who have a basic knowledge of English.
- Multilingual Memory Manager (US$24,000 for the server product, and US$4,000 for the Multilingual Memory Workbench), is an aid for corporate translators. It accesses a database of already-translated work and finds previously translated sentences and phrases to save time and effort by up to 60 per cent, Xerox says.
- Term Finder (US$24,000) lets companies build a central repository of terms and translations.
- Term Checker makes sure authors (of manuals, for instance) are using corporate approved terms for products and parts. That will make it easier for both comprehension and future translation.

Remi Chadel, XRCE [illegible] manager demonstrates Inxight products

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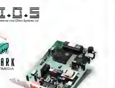

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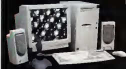

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EYE ON THE INDUSTRY

Column

HomePNA

Proposing Ethernet over Phone Lines

by David Tanaka

Home networking may be your next big opportunity.

At least, that's the hope of a group of companies that came together in June to form the Home Phoneline Networking Alliance or HomePNA. By the end of this year, HomePNA wants to have products available that will create an Ethernet network out of a home's existing telephone wiring.

Founding members include AMD, Intel, 3Com AT&T Wireless, Lucent Technologies, Rockwell Semiconductor, Epigram, Tut Systems, Compaq, Hewlett-Packard and IBM. Initially the group has adopted a system called HomeRun, developed by Tut Systems, that allows 1Mbps transmission speeds.

The group says it will publish and promote Tut's work as an open specification later this year. And AMD announced it would be developing a single-chip implementation of the specification. According to AMD, this product could be integrated into motherboards, network interface cards or consumer electronics devices.

However, 1Mbps is just the starting point. The group expects that 10Mbps could be available by mid-1999, and it also says 100Mbps is achievable. For example, the group states that Epigram has a patent-pending technology that defines a scaleable Ethernet that would initially operate at 10Mbps but could scale up to the 100Mbps range.

Piggy-backing data signals onto existing home wiring isn't new. Past schemes have used phone or electrical wiring as the cabling by which, for example, a computer could send data to a printer across the room without the need for the usual printer cable. HomePNA's solution is based on sharing the telephone line using a system called Frequency Division Multiplexing, or FDM. FDM assigns unique frequency bands to the services sharing the wire.

The regular telephone services uses a range of approximately 20Hz to 3.4KHz. ADSL and other "xDSL" services will operate in the 25KHz to 1.1MHz range, while the Home Phoneline system will use a frequency range above 2MHz. For example, Tut is using the 5.5MHz to 9.5MHz range for its 1Mbps system.

Creating reliable 10Mbps Ethernet within the loose wiring structure of a household phone system isn't a walk in the park, the HomePNA points out.

This is not Category 5 wiring. For example, phones as well as other appliances in the home can add noise to the phone line. The phone line branching — and with it the network wiring — would change whenever anyone performed the simple task of plugging in another phone or fax machine. And if someone picked up a phone to make a call, the data transmission characteristics of the phone wiring would change.

A simple home networking system could also drive the market for house automation devices, where a connection to the central computer would be as close as the nearest phone jack

Still, the group is bullish that it can overcome these obstacles to meet the demands of what it sees as a huge market. It says there are already 15 million U.S. homes that have more than one computer, and that is growing by 30 per cent a year. Moreover, the number of other connectable devices — set-top boxes or Internet computers, for example — is also supposed to grow rapidly over the next five years, creating a demand for some way to connect and communicate among devices in a home setting. The alliance estimates that by the year 2002, 15.3 million households in the U.S. alone will depend on some kind of in-home networking to connect multiple PCs or indeed, PCs to other electronic devices.

Initially, however, the alliance predicts the main demand for home networking will be driven by the desire for simultaneous access to the Internet for more than one family member. And, just as in the business environment, networking will be demanded for file and peripheral sharing. Kids would be able to play multi-player games over such a network, either on networked computers within the same home or out over the Internet. A simple home networking system could also drive the market for house automation devices, where a connection to the central computer would be as close as the nearest phone jack.

The first products will likely take the form of multi-mode modems and Ethernet controller cards and chips. Eventually the alliance would like to see Home Phoneline Ethernet technology included in a range of devices, from PCs to digital TV sets to Internet appliances. It suggests that network interfaces could be included at little additional cost on common consumer peripherals like printers.

Of course, HomePNA isn't the only group zeroing in on fast connectivity for the home. A recent news report from Tokyo stated that JVC and the Japan's Ministry of International Trade and Industry (MITI) are working on a 200Mbps infrared networking system for the home.

Contact: *http://www.homepna.org* CCW

David Tanaka is Editor of The Computer Paper. He can be reached at david@tcp.ca

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Developers Buy What They Already Know

by Peter Wolchak

When most developers go shopping for tools they want to buy a brand name. They use what their peers use. And, increasingly, developers are working on infrastructure code

But, according to users and analysts, developers are not that loyal to any one vendor. Moreover, Sun Microsystem's 100% Pure Java rallying cry has not taken hold of their hearts and minds.

Contrary to common business wisdom, which says companies must differentiate themselves — coders most often select tools that their friends and competitors use. This allows them to draw on a larger knowledge base and also ensures that, when they need to hire, there will be experienced coders available.

According to Karen Boucher, a vice-president at The Standish Group International Inc. in Dennis, Mass., there are two primary criteria used when selecting a development tool. "One is market share, the other is how well the product fits your application (goals). But the overriding one is market share. Companies want to use a tool everyone else is using. They feel that if all their competitors are using it, then they have to use it too."

Buying a popular tool also ensures firms can find knowledgeable staff. "Companies don't want to buy a tool that no one knows how to use, because one of the major problems IS shops have is finding talented people," Boucher said. "So if they go with a no-name company how many people are they going to find?"

"Forté, for example, has some good numbers, but if you're a large company, how many knowledgeable Forté developers can you get? That's a huge consideration."

Buying popular tools also ties developers into a larger community of those who can answer technical questions, according to Rob Schreck, president of MER Systems Inc., a client/server development firm in Toronto. "If a lot of people use a tool, there is always someone out there who has pushed the operating envelope with the tool and can tell you about it," he said. "That means the information is always out there to be found. For example, with Borland's MIDAS technology, in Version 1.0 there were a few issues and I can tell you what they all are, what the bugs are, and how to get around all of them."

A large user community also helps vendors improve their tools, Schieck said. "The more people who use a product, the more people will find bugs and more will get reported back to the vendor and more gets fixed and the product becomes better."

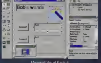
Familiarity

Typical developers, standing in front of a rack of software with cash in hand, will buy what they already have. That means someone who uses Microsoft's Visual C++ 4.0 will probably buy Visual C++ 5.0 when it's time to upgrade. "It's an easy sell to sell people what they already have. Familiarity is very important," said Greg Michetti, president of systems integrator Michetti & Associates Inc. in Edmonton.

Given a compelling reason, however, Michetti will quickly jump to another vendor, even though he has invested a lot of training dollars in the Microsoft tools his staff uses. "Rule number one here is to never fall in love with software," he said. "We know the Microsoft stuff well, but if something else looks good — like Delphi, like VisualAge, like Visual C@fé — we'll look," he said. "This business changes every week and you have to continually reinvent yourself."

But according to MER's Schieck, reducing upgrade training costs and downtime by sticking with the familiar is important, especially for smaller development shops. "When you're a large systems house, the cost of exploring Symantec's Visual C@fé versus Microsoft's Java product versus IBM's product versus Borland's product is a drop in the bucket. You can assign a full-time body to look at those for six months and it won't have a huge impact on your bottom line," he said.

"But when you're a small development house — and I'm small — the cost of changing tools is high. If it takes me three or four person-months to get reasonably proficient in a tool, that's time when I'm not generating revenue. So changing tools is expensive and you tend to use what you already know," Schieck said.



Microsoft Visual Basic 5

Out In Front

Walking away from the cash register, most client/server and Web developers are carrying Microsoft in their shopping bags, according to numbers from the vendor.

Norbert Mika, marketing manager for development tools at Microsoft Canada Co. in Mississauga, Ont., said his company is more than simply leading the pack — it is far out in front.

Mika said among North American Rapid Application Development coders, over 80 per cent are using Visual Basic, with the next closest competitor, Borland's Delphi, far behind at 17 per cent. Amongst C++ users, Microsoft's Visual C++ comes in with 80 per cent usage rates, Visual InterDev is used by 52 per cent of enterprise Web developers and Visual J++ is used by 35 per cent of North American Java programmers.

Those numbers are impressive, even if they are not completely accurate, according to The Standish Group's Boucher. For example, a Microsoft press release from February, 1998 claims Microsoft's Visual Studio box set has "penetrated over 90 per cent of the Fortune 1,000 market," a figure Boucher calls a "serious overestimation."

But whatever the number, Boucher said Microsoft has dominance in mindshare and clearly leads the RAD market.

One Box Fits All

According to Microsoft's Mika, one reason for the vendor's success is its decision to offer five core tools — Visual Basic, Visual J++, Visual C++, Visual InterDev and Visual FoxPro — in the one-box Visual Studio package. "There is a trend towards developers using more than one tool. If you look at the complexity that developers are developing for, it ranges from a CE device to a desktop computer to a client/server application, to enterprise applications and all the way to Web applications," Mika said.

He said that multi-architecture reality means the average company uses at least two different tools internally.

Price is also a factor. According to Mika, with the exception of Visual J++, it is cheaper for a developer to buy the Visual Studio package than to buy any two of the tools individually.

That approach reflects a general industry direction, Boucher said, which will eventually result in fully integrated tool sets which share a common interface and development methodologies. "There is a trend towards integrated tools, towards letting developers work together," she said. "In other words, having tools for Java programmers, tools for Cobol programmers, tools for C++ programmers, but then having them work together so that eventually it won't matter that different groups of programmers throughout the company use different languages, because they'll all be able to share their code."

That sounds good to Michetti, but he has yet to experience it. "If someone said they had one-stop-shopping, that would appeal to me but I'd have to see it to believe it."

Infrastructure Work

But what are coders working on with all these tools?

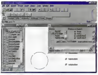
Increasingly, back-end issues are coming to the fore, with developers striving to improve the ties between the tiers. "Most of the money being spent on new applications is actually spent on the server side," Boucher said. "Of 100 applications we looked at, 70 per cent of them were infrastructure code, so most of the money is not spent on making the screen look nice, it's on the back end, bringing systems together, getting data from multiple sources, and issues like security and availability."

This trend has only kicked in over the last year, she said, as people started to look beyond attractive user interfaces. "We went through a two-tier client/server stage where people were interested in GUIs, but then suddenly people realized the applications looked nice but they weren't performing as well as the old applications did — there's a fancy screen, but the applications can't talk to each other.

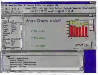
"So now we're seeing a shift people are taking a better look at the infrastructure They still develop the snazzy screens but they want to make sure the back end is taken care of first "

MER's Schieck has also spotted this trend, but he points out that vendors have yet to deliver high-quality, modern tools for building robust three-tier architectures "Three-tier tools in general are the equivalent of using a standard C compiler to write Windows 3 0 applications " he said "When you want to write an application that uses RMI or CORBA or even DCOM, you have to write a lot of code to make it do anything, because they haven't built the tools to make it really simple yet '

He added "I think that there are going to be big changes in that over the next six months, so that when you build enterprise three-tier applications the tools will be closer to what you see in [the visual] tools today."



Symantec Visual Café



Inprise/Borland Delphi 3

The Vendor Picture

The vendors who profit from that trend, according to the Standish Group's Boucher, will be those which offer easy-to-use infrastructure products "Developers are saying, 'This middleware stuff sounds great, this infrastructure stuff sounds great but I have a lot of other things to learn, so make it easy for me '"

She added "So the products are going to be differentiated by how easy it is to bring them in and use them, and looking at the players in the market to see who can make it easy, you see Microsoft with MTS, which is much easier to use than a traditional TP monitor, BEA can create a great middleware product but they're not good at creating easy-to-use tools, and IBM, which has some great tools but you have to spend a lot of time learning to use them "

She also pointed to Oracle Corp , with its Network Computing Architecture, as a future player in this market

The company formerly known as Borland has taken this trend to heart, using the catchphrase "Integrating the Enterprise" as the basis of its new name Inprise Corp Boucher said Inprise may have a bright future "Borland has always created tools developers have liked, so they can be successful."

Being Pure

But while ease of use and familiarity are valued, following Sun's 100% Pure Java edict is not Data from The Standish Group shows that 6 4 per cent of developers plan to use pure Java and 6 5 per cent will go with Windows-specific Java

"Java itself is important, but what isn't important is the discussion around pure Java and what we call MS-Java. It's evenly split as to which one developers want to use," Boucher said "Not too many users are choosing their development tools based on whether they supports pure Java or not."

Michetti is one of those "I don't care at all I understand Sun's desire (to have 100% Pure Java) and I like Sun a lot, but whether it's 100 per cent pure or 90 per cent pure is totally irrelevant "

MER's Schieck, however, is increasingly writing enterprise-wide applications, and purity matters in those environments "I care, because I'm moving more and more towards working for people who have a couple of Unix boxes, an MVS machine and the data somewhere else, and they want to get at it from almost anything If you go without 100% Pure Java the issue is you are building things that only run in a Wintel world and that's a problem

"So my personal opinion is 100% Pure Java is extremely important," Schieck said

Tool Confusion

The Java battles the various languages and numerous competing vendors mean application developers are faced with a huge range of choices

"It is getting really difficult to keep track of all the different streams that are going on out there," Michetti said "It's getting tougher because there are a lot of good products and a lot of variations on a theme, like the HP version of Java or Microsoft's or Sun's For example, we've hardly looked at some of the Borland stuff lately "

"A lot of them are pretty good but we just don't have the time " But the last thing Michetti wants is for vendors to slow the pace of innovation "We'll just have to work harder to keep up "

Peter Wolchak is a Toronto-based journalist who specializes in high technology reporting

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Totally new **Visual dBase 7.0** lacks documentation

by John Hamm

Product: Visual dBase 7.0 Professional
Vendor: Inprise Corp. (Borland International)
Pricing: US$349.95
Comments: It's a full-featured, object-oriented programming language, with a serious lack of documentation
Rating: B-

You may have noticed that Borland International recently changed its corporate name to Inprise. At the same time, the company's new upgrade to the venerable dBase database application development product has changed just about everything but the name.

With the current release of Visual dBase 7.0, Borland has attempted to reach the hundreds of thousands of application developers who learned their trade pounding out dBase code in the '80s, and the millions of businesses which are still using those DOS-based "legacy" applications.

Event-Driven Programming

Visual dBase follows the example of Visual Basic and other "Visual" development packages, which allow the user to place controls such as push buttons and check boxes on a form by dragging the control from a tool palette over to the form. Once the control is placed on the form, the user may customize its properties by simply clicking choices on a properties palette. No programming is required until the point at which the form must be told what to do when the button is pressed or the check box is checked. This is called event-driven programming.

For example, you may have a button labeled "Close" on your form. When you click the Close button you are initiating an event. Programming the form to correctly respond to events is easily achieved in Visual dBase 7.0 by selecting an event on the "Events" palette. In this example, we would select the "onClick" event. When we do this, the source-code editor opens up with the skeleton program pre-written. All that is required in this case is to insert a single line of code: *form.close()*

Now, when the user of the finished application presses the Close button, the form will close as expected. Of course, more complicated events will require more programming — perhaps hundreds or thousands of lines.

Visual Tools

Visual dBase 7.0 is shipped with a generous supply of tools to make visual programming easier. Along with check boxes, push buttons and list boxes, there are image, graph, spreadsheet, spell checker and dozens of other custom controls that really do make visual programming fun and relatively easy. The variety of tools is better than Visual Basic 5.0 and, like Visual Basic, there are hundreds of freeware and shareware custom controls available on the Web that can be downloaded and added to a components palette to further extend the product.

In addition to the excellent array of visual components, here is perhaps the finest programmer's text editor in existence. One of Borland's acquisitions during the company's glory days was the popular text editor Brief. Borland has since integrated this into all its development products. Brief is infinitely customizable, blazingly fast and a serious productivity booster. Syntax color-coding is a matter of course, but like everything else in this remarkable editor, the color-coding can be customized to suit one's tastes.

dBase 7.0: A full-featured object-oriented programming language

Documentation

Documentation for Visual dBase 7.0 consists of a skinny little *Getting Started* book and the on-line help file. The little book is absolutely essential for starting off, but it won't take you very far. There is a Language Reference available with the high-end Client/Server Edition but not in the Standard Edition. This is a serious problem for both new and experienced users as the dBase language has been completely overhauled for version 7.0. Gone is the "@ SAY GET" syntax and almost everything else dBase programmers have come to expect. The product now comes with a new, seductive, full-featured object-oriented programming language. Unfortunately, without a language reference this new language is almost impossible to learn. The on-line help file version is not much help. Very few topics have examples and when they do, the examples are complex and obscure. A tutorial might have helped but, alas, there is no tutorial. There are several good examples of projects, forms and reports in the samples directory but without guidance it takes an unreasonable amount of time to find examples of even the most trivial operations.

Disappointment

Yes, we were disappointed. The tools, features and the object-oriented language make Visual dBase 7.0 potentially the best desktop database application development product available.

But this is not just an update of the old dBase language. It is a completely new programming language. Without documentation it is unusable. Imagine trying to learn C, C++, Java or even Visual Basic from a help file. We will wait. If the program gains some momentum, there will be books. Maybe Borland will get it together and improve this potentially excellent product by telling us how to use it. In the meantime we cannot recommend Visual dBase 7.0. We cannot see any reason why a new developer would choose this under-documented first release. Nor can we see any advantage for dBase coders wanting to upgrade — the only thing dBase about this is the name.

Fans of the classic dBase language may want to keep their eyes peeled for Microsoft's Visual FoxBase 6.0 upgrade. ■

John Hamm is co-owner of Vancouver's EastSide DataGraphics. He can be contacted at: harvest@bc.sympatico.ca

SAP expands products, markets

by Grace Casselman

The business applications giant is leveraging the Euro, Y2K opportunities, and improving decision support for R/3 customers.

Any company, be it small or large, needs to attract new customers and expand current business. But for a company like Germany's SAP AG, which saw 1997 revenues of 6.02 billion DM (about $4.94 billion Canadian) and growth of about 70 per cent annually, expectations are extremely high. Sustaining that volume will become an increasing challenge.

That's why it's so important for SAP — a software developer targeting the core business system applications in corporations with the SAP R/3 product — to make its case particularly compelling, and to increase appeal for new customers, particularly in the (relatively) small to medium-sized market segment. That's a notable target for SAP which has been traditionally known for addressing particularly large corporations among its 16,000 worldwide installations. That effort includes the recently announced Accelerated Solutions initiative — a bundle of software and services aimed at businesses with $10 million or more in annual revenues. About 80 per cent of the software comes shrink-wrapped from SAP, while the remainder gets configured at the customer site, commented SAP Canada president Robert Beauchemin. Implementations are expected to take as little as 16 weeks, and Beauchemin said total cost for a corporation starts at about $250,000.

Robert Beauchemin: SAP's business intelligence technology means better business decisions.

A recent report by Boston's Aberdeen Group said that SAP customers studied were experiencing implementions within 4.4 per cent of the plan, and within 5.5 per cent of budget. The average actual implementation in the study was 6.9 months.

SAP rather boldly proclaims its Year 2000 compliance, and is even providing tools to allow partners and customers to test their own developments that may rest on the SAP core technology. "There's no crisis on R/3 systems. They're Year-2000 ready by design," said Henning Kagermann, co-chairman of the executive board at SAP AG.

European companies in particular are wrestling not only with the Y2K, but also with the impending conversion to the Euro currency, which has been heralded by many pundits as an even bigger technical challenge than the millenium bug.

Industry analysts say that while anyone doing business with Europe will need to think about the new currency, companies with European subsidiaries or those that derive more than 20 per cent of business from European sales must pay particular attention to their computer systems.

The trickiest aspect to the problem will be the requirement for "triangulation," in which a transaction will not only need to be converted from one currency to another, but will need to be simultaneously processed in the Euro, as companies will be working in both the Euro and their local currencies during a 3.5-year transition period.

As well, the legal rules surrounding the Euro require that companies provide accounting systems that will handle up to five numbers to the right of the decimal point.

A report from Joshua Greenbaum, senior consultant and director with the Hurwitz Group, said the Euro will force most companies running back offices on custom-developed and legacy code to switch to packaged solutions within the next five years.

SAP says all currently shipping products contain a Euro functionality component. Moreover, customers of previous products can get the feature in the form of free release upgrades. (Of note, SAP AG says it will switch its business over to using the Euro currency at the first possible moment, which is Jan. 1, 1999.) "Most of us know it's not just another currency. There is less risk of fluctuation, more opportunity for small and medium-sized enterprises (with open borders and common currency) and it's easier to reach new markets," said Kagermann.

"All of a sudden, European companies can operate across national boundaries, said Michael Klemen, in sales marketing for SAP AG "But the road to Euro won't be a walk in the park." He said 50 per cent of overall costs associated with conversion to the Euro are expected to involve computer-related expenses

The historical idea behind SAP is to provide a robust software platform for running what are generally mission-critical applications When a company installs an SAP solution, that typically goes hand-in-hand with a strategic rethinking of business processes However, SAP is looking to make the available information and potential analysis a lot more useful to business managers "Business intelligence is everything that helps people make the right decisions in time," said Claus Heinrich, SAP executive board member Indeed, at the recent Sapphire Madrid user conference, the company rolled out its SAP Strategic Enterprise Management Beauchemin said the business intelligence product "helps executives make better decisions and creates value for stakeholders in the company." Applications include

- Business Planning and Simulation (BPS) a simulation and modeling tool to examine the impact of various activities,
- Business Consolidation and Sourcing a Web-based Editorial Workbench for gathering external data, usually over the Internet
- Corporate Performance Monitor a technology that continuously monitors actual performance against what was previously identified as "strategic targets"

Julie Kaufman, software research analyst with International Data Corp Canada Ltd , in Toronto, said there's been an evolution to more and more sophisticated business intelligence products Executives need to "dig down to data in real time to make decisions," she said Moreover, that needs to be done quickly, in a distributed environment

James Shepherd, vice-president of research for AMR in Boston, said the outside world likes the idea of open systems, but in reality, all businesses really want is technology that works well "Companies never objected to having a relationship with IBM or Digital Microsoft has become a defacto standard, it makes their life easier, applications work together"

He said SAP's strategy of components really has to do with selling products into new markets and selling new "components" to existing installed base customers

At that recent Sapphire conference, more than 8,000 SAP customers and consultants representing 56 countries (with the bulk of attendees from Europe), faced the sweltering above 40°C temperatures in Madrid in June, to be briefed on the latest from SAP That included the announcement of new products in SAP's Supply Chain Optimization, Planning and Execution Initiative (SCOPE) They are the SAP Advanced Planner and Optimizer, which SAP says includes scheduling optimization algorithms proven in the process industries the SAP Business Information Warehouse enterprise-wide data warehousing product, and the SAP Business-to-Business Procurement product That procurement software, due in Q4, is a Web-based solution intended to handle the purchase-to-payment cycle between businesses in one screen (Earlier in June, SAP had announced the SAP Retail Online Store, meant to handle on-line shopping, include round-the-clock product catalogue browsing, price quotations, availability checks and order processing)

SAP has been making a big push towards componentized delivery of its software, claiming it's easy for customers looking to pick-and-choose pieces of SAP and third-party technology "Companies need to have componentization to piece together technology from other vendors and connect that properly, said IDC's Kaufman

For example, the Sales Force Automation is so componentized, a mobile solution can be loaded onto notebook computers and carried on the road by sales reps, explained SAP executive board member Peter Zencke (A few years ago, the industry would have been incredulous at the concept of SAP on a notebook)

How small will SAP go? When asked if SAP might appear on a Palm Pilot or Windows CE platform, Beauchemin would only reply "Stay tuned"

SAP announced Release 4 5 of its R/3 software, which adds particular functionality in the area of manufacturing, in the industries of aerospace, defence, automotive, engineering and construction, high-tech, chemical pharmaceutical and consumer products Product highlights according to SAP, include more control over materials management, repairs processing, plant maintenance, flow manufacturing, high-volume order management, trend analysis, project cost forecasting and environmental health and safety

In what could be seen as a strategic move against competitor Peoplesoft, SAP is focusing attention on its HR solution with SAP Human Resources System Release 4 0, which is available either as a stand-alone solution for businesses, or as part of an overall SAP implementation Kagermann said the software includes more global management capabilities for multi-national corporations

At home, SAP Canada's first-quarter revenues were $37 8 million in 1998 down about six per cent compared to that period in the previous year International Data Corp (Canada) Ltd , reported those results "show that building an organization to face the challenges of the next phase' of the enterprise applications market-place is in itself a challenge " IDC noted growth was hampered by attention to restructuring efforts within the company including a realignment into three geographical business units Western Canada, Ontario, Quebec and Atlantic Canada, as well as these industry units healthcare telecommunications and utilities, public sector, small/medium enterprises and education and training Meanwhile IDC reported "staggering' growth from SAP Canada's competitors, including 200 per cent growth from Oracle Canada

SAP Canada's Canadian resellers are Fin Tech Services Ltd of Calgary, Optimum Software Solutions of Toronto, and Primonics Inc of St Laurent, Que

Richard Morochove, president of Toronto-based consulting firm, Morochove & Associates Inc , said SAP is strongly refocusing its attention on particular industries in an effort to continue its growth rate "I see SAP as a company under transition" ▣

Grace Casselman is editor of Canadian Computer Wholesaler She can be reached at gracec netcom.ca

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17-inch Monitors

Large Displays are Poised for Big Sales

by Sean Carruthers

Remember when the 17-inch monitor was the big kid on the block? At one time, a monitor larger than 15 inches was considered huge, expensive, and of limited sales potential. What a difference a few years can make!

Larger monitors have been introduced into the market — in 19-, 20- and 21-inch sizes. For people who require bigger and better monitors, like graphics professionals or publishers, this is the way to go, no matter what the price. But as with any other area of the computer world, innovation causes the cost of older technology to drop.

With entry-level 17-inch monitors starting at street prices of less than $350, it's not just the professionals who will be coming in looking for them. Now monitors that once seemed large and decadent are becoming the norm.

Part of the reason for this is the flourishing on-line world. As more users go on-line, they are running more applications at the same time (spreadsheet here, a chat window underneath and maybe a mail program). A great way to keep better tabs on what's happening in which window is by using a bigger desktop space. With the smaller 14- and 15-inch monitors, boosting the size of the desktop to 1,024 by 768 or 1,280 by 1,024 was possible, but often at the expense of legibility. The 17-inch monitor is much more capable of comfortably handling those higher numbers.

A number of the monitors at entry level are just that: basic monitors, with minimum functionality and 28-mm dot pitch. This is where a good number of your sales will occur: many people want a basic monitor that shows what's happening on the computer. At this range, there are a number of good choices available.

However, it's worth pointing out to the customer that for a little bit extra, there is a lot more available, including monitors with 27, 26 and even 25-mm dot pitch, plus full image manipulation capability. The monitor is a piece of equipment that will likely last awhile, and people should be encouraged to purchase one accordingly. A customer who will be using the computer a lot may be much further ahead buying a better monitor. That will minimize eyestrain from lengthy use of a less-expensive monitor with a coarser dot pitch.

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It's also worthwhile to keep in mind the difference between shadow mask and aperture grille monitors. A shadow mask monitor has a ceramic plate (usually made of invar) with perforations designed to guide the color beams to the proper spot on the screen. Aperture grille, on the other hand, features a number of guide wires on the outside of the tube, which line up the beams. The drawback to this technology is those wires require two "damper wires" to hold them in place, and two visible horizontal lines appear on the display. Many people swear by the richer colors produced by the aperture grille technology, but if those two small lines will be distracting (either for graphic editing reasons or for reasons of personal preference), the shadow mask and its crisper display are the way to go. The Trinitron and Diamondtron models are the aperture grille technologies from Sony and Mitsubishi, respectively.

This month, we've gathered together a number of entry-level monitors. As you can see, within a few hundred dollars, there are a wide range of possibilities open to the customer looking to purchase a 17-inch monitor for the first time.

A Note about the Tests:

Monitor testing is quite subjective. We used DisplayMate by Sonora Technologies (*http://www.displaymate.com*) for testing purposes, running each monitor through a series of test screens to look for flicker, focus, edge clarity, moire, convergence and assorted others capabilities.

- **Flicker:** The display on the screen is created by repeated passes of a color beam, which lights up phosphor on the inside of the monitor tube. Flicker happens when the phosphor noticeably dims before the beam can make the next pass. Certain colors are more susceptible than others to flicker (yellow seems to be the worst).
- **Focus, edge clarity and convergence:** The display relies on three separate color beams (red, green and blue) to create the myriad of colors you see on your screen. How well they line up with each other (or converge) determines how good the picture quality on the monitor will be. Because they are furthest away from the firing mechanism, the outer edges of the screen are the hardest to line up, and can become out of focus even when the rest of the picture is sharp. Certain colors are generally better converged than others: green-red convergence is most important to the picture quality, followed by green-blue, then red-blue. For that reason, purple images can often show up as a blur, even on some of the best monitors.
- **Moire:** The moire effect occurs when a finely-drawn pattern on the screen conflicts with the pixels on the screen, in concert with the timing of the refresh rate of the display. This causes "wave" patterns to appear on top of the pattern being shown. Anyone who has seen pieces of window screens overlapping knows this phenomenon — it only takes a little bit of desynchronization of the layers to cause some complex patterns. The more often this effect is produced by a monitor, the less suited that monitor is to graphic work with any complex and repetitive detail. Some monitors come with controls to "cancel" the moire, but the result is often a roughening up of the rest of the picture.

The reason these tests are subjective is because, unlike benchmarking software for CPU speed, most of the tests are done by eyeballing the screen and making a judgement call. In our chart, here's a rough guide to what the terms mean:

Quantities:

- Negligible: None, or amounts so little as to be imperceptible
- Minimal: Very small amounts detected, but nothing serious
- Some: Definitely visible, starting to interfere with the display in places
- Medium: Enough to be a serious annoyance without making the screen totally unviewable
- Subliminal (flicker only): subliminal flicker is flicker that occurs just under the level of conscious perception, when the user looks at the screen, flicker isn't evident, but something about the display just seems... wrong.

Quality:

- Excellent: Top-notch quality. Few problems, if any
- Very good: Still quite good, though the picture might feature slight loss of quality in certain places
- Good: Most of the screen is okay, but problem areas are becoming noticeable

Testing in 1,024 by 768 resolution was done with an 85Hz refresh rate, and testing in 1,280 by 1024 was done at 60Hz, to simulate average conditions for a good percentage of users. Some of the monitors are rated for refresh rates above the ones used, but many of these can only be achieved with a high-performance video card with a lot of video RAM. The better the video card used, the better the results will be.

The Contenders

For this month's test, we asked for inexpensive 17-inch monitors aimed at the consumer market. Because a few of the monitors received were higher-end products, they have been split off into a separate group at the end of the main batch.

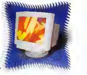
Acer AcerView 79g

Price: $690 street.

Pros
A .25 mm dot pitch offers great resolution
There is impressive frequency response
There are moire and convergence controls
A BNC connector is included for Mac compatibility

Cons
The design of the outer casing is flared, creating a slightly disorienting effect; things on screen look a bit crooked sometimes
The display jumped and jittered at 1,280 by 1,024 at 85Hz, but was solid at 75Hz
There is a distracting moire problem at higher resolutions

The AcerView 79g is not cheap, but it offers great refresh rates, great display quality and a good selection of user controls in the OSD. While the moire may make the unit unsuitable for higher-detail graphic work at times, it is otherwise a respectable choice for most users.



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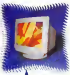
ADI MicroScan 5P+

Price: $598 street.

Pros: There is solid performance with minimal moire/flicker
The brightness/contrast on separate spinners allows for quick adjustment
There is good resolution with a 26-mm dot pitch

Cons: There are minimal OSD control settings

For the price, the MicroScan 5P+ is a bit skimpy on user controls in the OSD Otherwise, the performance is impressive, with great display quality and minimal flicker or moire problems.



AOC Spectrum 7Vlr

Price: $380 street.

Pros: The press-and-spin OSD control is very easy to use
There is a good selection of image shaping controls
The price is right.

Cons At a 28 mm dot pitch, image is a bit coarse, but not too bad

This monitor is a pretty basic and inexpensive unit, but the ease of use of the OSD control and the fact that it has image manipulation controls like pinbalance, parallelogram and color temperature makes it a great value, too

Value

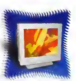
Cybervision C72

Price: $509 street.

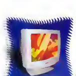
Pros: The .25-mm dot pitch provides a nice crisp image
There is a good selection of image manipulation controls
There is next to no flicker or moire.

Cons: The 15 8-inch viewable size is one of the smallest in this batch

The Cybervision C72 is a bit more expensive than some of the entry-level monitors but balances the cost with impressive specs and performance Overall, a great choice



Performance



Daytek DT-1726D

Price $469 street.

Pros: The .26 mm dot pitch offers good resolution and generally sharp picture quality
High refresh rates are available

Cons The short signal cord could be problematic, if more distance from computer is required
Edges were a bit wavy in places and the screen showed minor ghosting
The OSD option order is a bit strange common controls, like vertical/horizontal size and position, were listed at the bottom of the list forcing users to scroll through options like pincushion first

Daytek's DT-1726D generally provides a crisp clear picture with some lack of focus and a bit of distortion around the edges of the screen on the unit we tested Although these issues could become problematic for some users, it's still quite a competent and reliable monitor

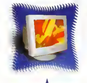
Digital Research Technologies DRMDN17

Price $399 street.

Pros. The OSD has clearly labelled buttons, and is easy to use. Certain buttons double as non-menu contrast/brightness.
The picture quality is quite good for a 28-mm dot pitch display.
The 18 1-inch viewable area is larger than average

Cons There is slight deformity around the edges of the screen

The DRMDN17 is a good unit, with a minimum of flicker and respectable image quality This isn't the cheapest product on the block, but it's reasonably close, and the image quality certainly makes it worth consideration for those on a budget.



Hyundai DeluxScan 7695

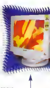
Price: $649 street.

Pros: A .26-mm dot pitch provides a high-quality display with a good frequency response
There is minimal flicker and moire

Cons: The selector for the OSD is split into two parts, consisting of a push button on the front of the monitor and a spinner wheel on the underside Not only is this arrangement a bit awkward for the user's hand the spinner wheel is also a bit touchy, reacting too fast or too slowly at times
When the screen resolution or refresh rate is reset at the adapter the monitor tends to reset all of the display settings including the brightness

The DeluxScan 7695 is a monitor with great performance, with problems that are mostly ergonomic The awkward setup of the spinner wheel for the OSD can be a bit painful for the wrist if used often Once set up though the user gets smooth, high-performance sailing This monitor is a bit higher-priced than most, however

Elco Xtreme

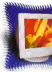


Price: $369 SRP

Pros: The monitor is an OEM version of the well-known Lite On Technology
It delivers solid performance with a minimum of flicker and moire

Cons: Some minor ghosting was noticed
At a .28-mm dot pitch, the image can be a bit coarse

With a higher dot pitch and slight ghosting problem, the Xtreme isn't perfect, but with a low price and a well-known manufacturer behind the Elco label, this monitor is still a good budget-conscious alternative



KDS Orchestra Steel Drum

Price: $495 street.

Pros: The monitor delivers reliable performance with a minimum of flicker and moire
The product offers a .26-mm dot pitch.
There is good frequency response
A BNC connector for Mac compatibility is included.

Cons: Image manipulation controls on the OSD are minimal
(It's not really a steel drum, although it doesn't sound bad if you tap the case.)

The oddly-named Steel Drum provides a great quality display for a reasonable amount of money The BNC connectors are a real plus for Mac users.

KDS is bullish about its KDS Advanced Replacement Express Service (KARES) warranty program If a monitor is defective within the three year warranty period, KDS will ship out a replacement product by air

The Higher-End

A few of the monitors we received were a bit out of the range we had asked for initially, but are included here for informational purposes

Compaq V75

Price: $772.

Pros: This has excellent display quality, with a good picture and next to no flicker or moire.
The USB port allows for the attachment of a keyboard or mouse through the monitor
There are separate brightness/contrast spinners
This a top brand name
This is relatively inexpensive, for a "performance" monitor

Cons: There are minimal OSD controls
The OSD control button layout is counter intuitive the + key is located below the – key

Although a bit thin in the OSD, the Compaq V75 monitor comes through in sheer performance, with a solid high quality display, all for a fairly low price The USB port is a nice touch

Eizo FlexScan TX-C7

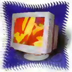
Price: $1 099 street.

Pros: The .25-mm Diamondtron display offers superior image quality
The automatic setting control is very accurate
There is a BNC connector for Mac compatibility
The OSD control button is a panel which tilts in the four compass directions, and the user clicks on the centrepoint. It's very intuitive

Cons: The OSD control panel is a bit touchy It's easy to click the "centre" by mistake when going for one of the directional arrows.
There was some ghosting evident on the unit tested
It's a bit on the heavy side

Eizo is known for creating high performance monitors, and the FlexScan TX-C7 is no exception The monitor has a very crisp picture, great frequency response and a good selection of features This is definitely a great choice for graphics work.

MAG Innovision DX700T



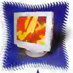
Price $569 SRP

Pros. The product comes from a well-known name in monitors.
This is a top-notch quality display at 25-mm dot pitch
There is a good selection of user controls including a non-menu brightness/contrast.

Cons There were slight edge deformities and edge flicker on the unit tested
The price is a bit higher than some of the others

Well-known in the monitor field, MAG Innovision delivers the goods with the DX700T, which has great image quality for the most part. Edge integrity was a bit of a problem, with some waviness and jitterness a good chunk of which was correctable with the OSD image manipulation.

Magitronic C-SV1701PS



Price $438 street.

Pros. The .28-mm dot pitch delivered reasonable performance.
The OSD controls were fairly intuitive

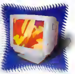
Cons The edge quality was not as good as the rest of screen (One corner of the monitor we tested was quite blurry)

Though the image might be a bit on the coarse side, the quality of the Magitronic monitor isn't too bad, except for some problems with focus at the edges of the screen

Mitsubishi DiamondScan 70

Price $629 SRP

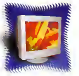
Pros The display quality is very good for a 28 mm dot pitch
The shallower design is great for smaller workspaces
There is a good selection of image manipulation controls



Cons The product is fairly expensive for a 28-mm dot pitch
The OSD is a bit non-intuitive

The most expensive of the 28-mm monitors this month, the Mitsubishi DiamondScan 70 is also one of the highest quality products in that dot pitch There is some moire and flicker in higher res, but otherwise this is a top-notch monitor

Monex Televideo SV200

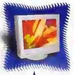


Price $449 SRP

Pros The DSD is very intuitive with non-menu brightness and contrast buttons.
There is a good selection of image manipulation controls
There is a good quality .28-mm dot pitch display
There is minimal flicker, and small amounts of moire

Cons There is a slight loss of focus around the edges

The Televideo SV200 has a great OSD interface, but the quality of the display as a whole may be inadequate for serious computer users This is better as a starter monitor or for the casual user



Panasonic PanaSync S70

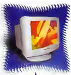
Price $679 SRP

Pros The high quality display has next to no flicker and only some moire at higher resolutions
There is a good selection of image manipulation options in the DSD

Cons. Even at a 27 mm dot pitch the image is a bit coarse
The price is high

The PanaSync S70 is certainly a sturdy and confident monitor with a great display quality. However the price tag may scare people away, especially with the monitor only checking in with a .27-mm dot pitch A shallower depth version is also available, at a higher cost.

Philips Magnavox 107s



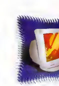
Price: $499 street.

Pros: There is excellent picture quality, considering the 28-mm dot pitch
Some of the buttons for OSD control double as direct controls for brightness and contrast, when the OSD is not active

Cons: The OSD control is fairly awkward, with a push-button on front and a hidden selector wheel underneath the chassis
The OSD requires the user to scroll down to either "save" or "exit" for each sub-menu, which can be time-consuming
The moire is fairly noticeable in 1,280 by 1,024 resolution

The Magnavox 107s from Philips has a display quality that is excellent, with a bit of flicker and some moire being the only real distractions The awkward OSD control configuration can cause some wrist pain while setting up the display. For the price, the unit provides great display quality without being excessively expensive.

Princeton E0710



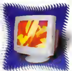
Price $599 SRP

Pros. This is a high quality display, at 26 mm, with minimal flicker
The OSD makes it easy to switch between related options, while editing values

Cons There is noticeable moire at both 1,024 by 768 and 1,280 by 1 024 resolutions
The product's priced a bit on the high side

The E0710 is an intriguing-looking monitor with a great display Although the moire problem might be a bit distracting for some users, this is in all other respects an impressive monitor

Samsung 7e



Price. $459 SRP

Pros This is a great quality display, showing only a little loss at the edges
The OSD controls are very intuitive and the buttons are easy to use, including the buttons that double as non menu brightness and contrast controls.

Cons Some moire is evident at 1,280 by 1,024
Brightness control did not appear to have a major impact on the screen

Overall

Even at a 28-mm dot pitch, the Samsung 7e delivers a great picture quality, for an amount of money that's not overly excessive The moire has the potential to be somewhat annoying at 1,280 by 1 024, but lower resolutions should be top-notch in almost every way

IBM P72

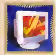
Price: $1,140 SRP

Pros: The picture quality is exceptional
The black casing provides a good contrast to the image on the screen for better clarity
This is a brand name
There are a full range of image manipulation controls

Cons The black control buttons disappear against the black monitor casing, making use a bit difficult The buttons are also a bit on the small side, which makes use awkward

From Big Blue comes Big Black, the only monitor we received that strayed from the standard off-white color The contrast of the casing makes the picture quality stand out even more than usual It's a monitor of outstanding quality from the get-go The $1,140 SRP is pretty steep, but if money is no object, this monitor is a dream

LG Flatron 78FT

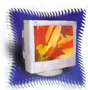


Price $859 SRP

Pros: This monitor has an astounding .24-mm dot pitch.
Pricing is competitive
There is good frequency response
There are separate brightness/contrast spin wheels

Cons: There is slight image distortion around the edges of the screen
The two tone coloring of the case (off white and blue-grey) can be a bit distracting
Moire is a bit problematic at 1,280 by 1 024

The "G" in LG Electronics stands for Goldstar the name under which LG's monitors previously sold Along with the new name the 78FT introduces LG's new Flatron technology, with an ultrafine 24 mm dot pitch While the picture quality is great, the coloration of the outer casing is a bit distracting That's a minor complaint about an otherwise fine monitor



Viewsonic GS771

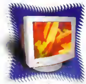
Price: $629 SRP

Pros: This has great display quality, even at .27-mm
The short-depth design is a plus for smaller workspaces
The OSD is relatively intuitive, and has a lot of image manipulation capabilities

Cons: The price is high
The moire can be problematic at 1,280 by 1,024

Viewsonic is another well-respected name in monitors. The GS771 comes in at the high-end of the entry level field price-wise, but delivers the goods in performance. Even with the .27-mm dot pitch, the picture quality is great, and the GS771 offers a great alternative to more expensive higher-end monitors.

Voxon 1728



Price: $415 SRP

Pros: The price is low
The OSD is easy to use

Cons: While image quality is generally good edge quality can be problematic. Flicker and moire appear at 1,280 by 1,024
There are minimal image manipulation controls
There are problems with regulation (image compression and expansion) surrounding even minor changes on the display.

Although the problem with image quality and screen regulation could be an annoyance for those who plan high usage, the price makes the Voxon worth consideration for the casual user.

Sceptre Dragon Eye D73A

Price: $499 street.

Pros: This provides good-quality .26 mm dot pitch at a great price.
The spinner controls double as brightness/contrast.
There is almost no moire or flicker

Cons: Although push-and-spin OSD controls are a great idea, they can be a bit awkward at times, especially when selection requires a lot of spinning. An indentation on the front of the spinners for finger traction would improve this
The machine we tested had a loss of focus in the centre of the display at 1,024 by 768, but this is likely something that happened in shipping

Sceptre is well-respected in the field of monitors and you can see why. The Dragon Eye D73A offers an impressive .26-mm dot pitch. The OSD spinner controls are a nice innovation, though they can be a bit awkward when a lot of spinning is necessary

Overall

Editors' Choice

Value

AOC Spectrum 7Vlr

The AOC monitor, from Peripheral Express, offers a great price/performance ratio, with a lot of features and an easy interface. Although the picture is a bit coarser, at a .28-mm dot pitch, the picture quality is great, and helps to make the AOC a great starter monitor, or an upgrade for someone on a budget.

Performance

Cybervision C72

In the field of lower-priced monitors, the Cybervision C72 is a treat, offering an outstanding .25-mm picture quality, excellent functionality in the OSD, and a price that's not too excessive. This is a great choice for someone who demands a lot from a monitor, but doesn't have the budget for a "high-end" unit.

Overall (tie)

Samsung 7e

Sceptre Dragon Eye D73A

Samsung's 7e model goes above and beyond, with a full-featured OSD, great quality display, and a really reasonable price. This monitor is perfect for all-round use.

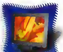
Though a bit higher in price, the Sceptre also makes a great monitor overall, with a finer dot-pitch, great picture, and innovative OSD selector wheel

Sean Carruthers is CCW's Test Lab Editor. He can be reached at sean@tcp.ca

The Skinny on Flat-Panel Displays

by Sean Carruthers

> *"Flat-panel displays are made up of hardwired pixel elements, which means they only look acceptable at the resolution for which they were wired."*



These days more people are looking to flat-panel LCD display technology as a monitor option. Previously seen mostly in banks and hospitals, where desktop space and emissions are a big concern, the flat-panel is becoming attractive to other markets, including home use. While it's true that flat-panels are still priced on the expensive side, manufacturers are starting to drop pricing on their LCD models as more demand emerges. Some predict that flat-panel technology may make up 10 per cent of the monitor market by the year 2000, and more than 50 per cent by 2005.

Traditionally, the flat-panel has flourished in environments where desktop space was at a premium (the banking industry), or where emissions from a regular CRT were a health or contamination concern (in the health industry and in laboratories). For the longest time, pricing remained high because demand from the general public was low, the technology was still cutting edge and the companies that wanted the technology were willing to pay for it.

While CRT displays aren't in any danger of losing their market share just yet, some developments are underway, which may serve notice that a change is coming. The change from the old DSTN to TFT active-matrix displays has made display quality sharper and more CRT-like. As far as lower unit costs, Sceptre seems to be leading the way with pricing, being the first company to bring a flat-panel display in under $2,000, and now currently offering its FT15G for a street price of $1 450.

There are still drawbacks to the technology, however. Although the price is dropping, typical retail cost for a flat-panel display is still far higher than for a CRT. In addition to the Sceptre FT15G, we also had the opportunity to look at the TTX PanoView 745 and the IBM 9516-B23. Both fine displays, the 14.5-inch TTX display comes in at $2,399 street price, and the 16.1-inch IBM has a suggested retail price of $5,700. This is still far from pocket change for the typical user.

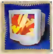
Further, flat-panel displays are made up of hardwired pixel elements, which means they only look acceptable at the resolution for which they were wired. A display with a hardwired resolution of 1,024 by 768 may look perfectly good when the desktop is set to that resolution. However, when the resolution is set to something smaller, one of two things may happen:

- the outer edges may become blank, centering the desktop area selected over the same number of pixels and discarding the rest;
- the display may become blocky and illegible (as the display tries to figure out which pixels should be doubled up and which shouldn't) while trying to spread 800 virtual pixels out over 1,024 actual pixels.

But the future of LCD displays appears to be bright. As the pricing continues to drop and the quality increases, more people are bound to seriously consider the flat-panel option when purchasing a monitor. CCW

Flat-Panel Displays

NEC MultiSync E700



Price $779 street.

Pros: This is a high quality .25-mm display.
The product is backed by the NEC name.
This cost is reasonably low for a performance monitor.

Cons. There are a few less image control features than usual on the higher-end models, and the OSD is hampered by a slightly confusing "proceed" button.
At 15.6 inches, the viewable area is smaller than most.
Moire can be a problem at 1,280 by 1,024.

Delivering high performance for a low cost, the MultiSync E700 checks in with a few less features and a smaller viewable area than some of the other monitors, but otherwise provides top notch performance.

Sony GDM 200PS

Price. $1,099 street.

Pros The .25-mm dot pitch Trinitron provides outstanding picture quality.
There is a full range of image manipulation capabilities.
A BNC connector provides Mac compatibility (Sony invented the Trinitron technology!).

Cons This is one of the higher-priced monitors.
Moire is problematic at 1,280 by 1,024.

One of the biggest names in technology in the world, Sony's GDM 200PS is a nice piece of technology, with a great display quality and a ton of features. At a $1,099 street price, it's not cheap, but it's backed by Sony quality.

TTX 8792UA

Price $769 street.

Pros This is a high-quality .25-mm dot pitch display.
OSD controls feature separate buttons for menu categories and for easier navigation.
The BNC connector provides Mac compatibility.
There are non-menu brightness/contrast buttons.
The price is competitive.

Cons The moire is problematic, especially at 1,280 by 1,024.

TTX's 8792UA model offers a lot of features for a budget price. The three separate menu buttons for "picture," "color," and "status" are nice features, as they all activate the OSD in the appropriate place, and make navigation a breeze.

17-inch Monitors

LAB TEST

	Acer AcerView 79g	ADI MicroScan 5P+	AOC Spectrum 7Vlr	Cybervision C72	Daytek DT 9720D	Digital Research Technologies DRMON 17	Elsa Xtreme	Hyundai Delux Scan 7695	KDS Orchestra Steel Drum
Screen type	Trinitron	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask
Viewable size (inches)	16	16	15.8	15.8	16	16.1	15.9	15.7	15.9
Dot pitch (mm)	0.25	0.26	0.28	0.25	0.26	0.28	0.28	0.26	0.26
Screen coating	AG	AG,AR,AS	AG, AR, AS	AG,AS	AG,AS	AS	AG, AR, AS	AG,AR,AS	AR
Horizontal frequency range (KHz)	30–95	30–80	30–70	30–95	30–72	30–70	30–86	30–95	30–95
Vertical frequency range (Hz)	50–150	50–120	55–120	50–120	40–120	50–120	50–100	50–150	50–120
Maximum power consumption (W)	135	115	100	100	100	120	130	130	115
Picture quality at 1,024 x 768	very good	excellent	very good	excellent	very good	very good	very good	excellent	excellent
Picture quality at 1,280 x 1,024	very good	excellent	very good	excellent	very good	very good	very good	excellent	very good
Edge focus at 1,024 x 768	very good	very good	very good	excellent	very good	very good	very good	very good	very good
Edge focus at 1,280 x 1,024	very good	very good	very good	very good	very good	very good	very good	very good	very good
Flicker at 1,024 x 768	subliminal	minimal	minimal	minimal	subliminal	minimal	subliminal	minimal	negligible
Flicker at 1,280 x 1024	minimal	minimal	minimal	minimal	minimal	minimal	minimal	minimal	minimal
Moire at 1,024 x 768	some	negligible	minimal	minimal	minimal	negligible	minimal	minimal	negligible
Moire at 1,280 x 1024	minimal	minimal	some	minimal	some	some	minimal	some (cancelable)	some
Convergence	excellent	very good	very good	excellent	very good	excellent	very good	very good	very good
Image manipulation capabilities									
Pincushion	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pinbalance	no	no	yes	yes	no	no	no	yes	no
Trapezoid pattern	yes	yes	yes	yes	yes	yes	yes	yes	yes
Parallelogram pattern	yes	no	yes	yes	no	no	no	yes	no
Image rotation	yes	yes	yes	yes	yes	yes	yes	yes	yes
Color temperature settings	yes	no	yes	yes	no	no	yes	yes	yes
Other	auto convergence			zoom	zoom			moire	
Connector	D-Sub, BNC	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub, BNC
Dimensions (WxHxD) cm	42.2 x 42 x 44	41.5 x 41.4 x 45.3	41 x 43.8 x 42	41.2 x 40.5 x 40.5	42 x 44 x 44.5	40.8 x 42.1 x 43.4	43.7 x 42 x 44.7	41 x 41.9 x 44.7	40.1 x 42.4 x 44
Weight (kg)	23	20	18	16.5	17	17.3	17.4	17.3	18.7
Energy compliance	TCO95, Energy Star	NUTEK, TCO95, Energy Star	MPR-II, Energy Star	MPR-II, Energy Star	MPR II, Energy Star	TCO95, Energy Star	MPR-II, Energy Star	NUTEK, TCO95, Energy Star	MPR-II, Energy Star
Contact	(905) 475-8706	1-800-228-0530	1-888-734-7577	1-800-463-6783	1-800-329-8351	1-888-218-4980	(905) 479-7301	1-800-568-0060	1-888-537-9001
Internet contact	www.acer.com	www.adi.com.tw	www.aocnafo.com	www.ctd.net	www.daytek.ca	www.linkup.on.ca	www.elsasys.com	www.hei.co.kr	www.kdsmedia.co
Warranty (parts, labor)	3,1	42 months	3,3	3,3	3,3	3,3	3,3	3,3	3,1
Price	$800 street	$598 street	$399 street	$599 street	$489 street	$389 street	$389 SRP	$549 street	$495 street

Value

Performance

MAG Innovision DX700T	Magitronic C SV1701PS	Mitsubishi DiamondScan 70	Munac Televideo SV200	Panasonic PanaSync S70	Philips Magnavox 107s	Princeton E0710	Samsung 7n	Sceptre Dragon Eye D73A	Viewsonic GS771	Voxon 1728
Trinitron	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask
16	15.9	15.7	16	16	15.9	15.95	15.7	16.1	16	16
0.25	0.28	0.28	0.26	0.27	0.28	0.26	0.28	0.26	0.27	0.28
AS	AG, AR, AS	AG, AR, AS	AR, AS	AG, AR, AS	AG, AS	AR	AS	AG	AG, AR	AG, AS
30–70	30–98	30–70	30–70	30–70	30–70	30–70	30–70	30–70	30–70	30–64
50–120	50–150	50–130	50–120	50–150	50–120	50–120	50–150	50–120	50–150	50–120
130	120	90	100	99	115	100	90	110	110	100
excellent	very good	excellent	very good	excellent	excellent	excellent	excellent	very good	excellent	very good
excellent	very good	excellent	very good	very good	excellent	excellent	excellent	very good	very good	very good
very good	very good	very good	very good	excellent	excellent	very good	very good	very good	very good	good
very good	good	very good	very good	very good	excellent	very good	very good	very good	very good	good
minimal	negligible	minimal	negligible	negligible	minimal	negligible	negligible	minimal	negligible	minimal
minimal	minimal	some	minimal	minimal	some	minimal	minimal	minimal	minimal	some
negligible	minimal	minimal	minimal	negligible	minimal	some	negligible	minimal	minimal	minimal
medium (cancelable)	some	some	some	medium	medium	some	some	minimal	medium	some
excellent	very good	very good	very good	excellent	excellent	very good	very good	very good	excellent	very good
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
yes	no	yes	yes	yes	no	yes	yes	no	yes	no
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
yes	no	yes	yes	yes	no	yes	yes	no	yes	no
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
convergence, scale		moire			moire					
D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub
40.8 x 42.1 x 45.4	41.7 x 42 x 44.7	42 x 42 x 43	41.4 x 42.6 x 43.5	41 x 41.6 x 44.4	42 x 42.4 x 45.2	41 x 41 x 44.8	42 x 42.6 x 42.2	40.6 x 42 x 42.7	41 x 41.6 x 38.5	41.8 x 41.7 x 43.6
17.5	17.4	17	16.5	15.7	16.5	15.8	17	17.2	17.2	17.3
Energy Star	MPR II, Energy Star	NUTEK, Energy Star	MPR II, Energy Star	TCO 92, Energy Star	NUTEK, Energy Star	NUTEK, Energy Star	MPR II, Energy Star	MPR II	NUTEK, TCO 95, Energy Star	MPR II, Energy Star
(905) 890-9488	1-800-665-5407	1-800-387-9630	(905) 709-9468	1-800-265-3618	1-800-387-0564	1-800-747-6249	1-800-726-7864	1-800-788-2878	1-800-888-8583	1-888-726-2244
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3,1	3,3	3,3	3,3	3,3	3,3	3,3	3,3	5,3	3,3	3,3
$589 SRP	$438 street	$629 SRP	$449 SRP	$675 SRP	$480 street	$599 SRP	$450 SRP	$490 street	$620 SRP	$415 SRP
							Overall	Overall		

	Compaq V75	Eizo FlexScan TX C7	IBM P72	LG Flatron 78FT	NEC MultiSync E700	Sony GDM 200PS	TTX 8792UA
Screen type	Shadow mask	Diamondtron Aperture Grille	Trinitron	Flatron	Shadow mask	Trinitron	Aperture Grille
Viewable size (inches)	16	15.8	16	16	15.6	16	16
Dot pitch (mm)	0.26	0.25	0.25	0.24	0.25	0.25	0.25
Screen coating	AG, AS	AG,AS	AR	AG,AS	AS	AG AR	AG AR AS
Horizontal frequency range (KHz)	31.5 – 69	27 – 92	30 – 85	30 – 85	31 – 82	30 – 92	30 – 95
Vertical frequency range (Hz)	50 – 100	50 – 160	60 – 160	60 – 160	65 – 120	48 – 160	50 – 100
Maximum power consumption (W)	115	115	120	120		120	130
Picture quality at 1,024 x 768	excellent	excellent	excellent	excellent	excellent	excellent	excellent
Picture quality at 1,280 x 1,024	excellent	excellent	excellent	very good	very good	very good	excellent
Edge focus at 1,024 x 768	very good	excellent	excellent	very good	excellent	excellent	excellent
Edge focus at 1,280 x 1,024	very good	excellent	excellent	very good	very good	very good	very good
Flicker at 1,024 x 768	negligible	subliminal	subliminal	some	subliminal	subliminal	minimal
Flicker at 1,280 x 1024	minimal	minimal	minimal	some	minimal	minimal	subliminal
Moire at 1,024 x 768	negligible	minimal	minimal	minimal	minimal	negligible	some
Moire at 1,280 x 1024	minimal	some	some (cancelable)	medium	medium	medium (cancelable)	medium
Convergence	excellent	excellent	excellent	excellent	very good	excellent	excellent
Image manipulation capabilities							
Pincushion	yes	yes	yes	yes	yes	yes	yes
Pinbalance	no	yes	yes	yes	yes	yes	yes
Trapezoid pattern	yes	yes	yes	yes	yes	yes	yes
Parallelogram pattern	no	yes	yes	yes	yes	yes	yes
Image rotation	yes	yes	yes	yes	no	yes	yes
Color temperature settings	no	yes	yes	yes	yes	yes	yes
Other	moire	convergence	zoom, moire, convergence	zoom, moire		convergence, zoom, moire	convergence
Connector	D-Sub	D-Sub BNC	D-Sub	D-Sub	D-Sub	D-Sub, BNC	D-Sub, BNC
Dimensions (WxHxD) cm	43.9 x 42.1 x 43.9	41 x 41.3 x 43.9	40.8 x 44.1 x 43.8	43.5 x 45.5 x 46.8	40.3 x 42.6 x 45.3	40.6 x 43.2 x 42	41.8 x 43 x 44.6
Weight (kg)	20	21	19.2	21	18.5	19.5	18.5
Energy compliance	TCO 95, Energy Star	TCO95, Energy Star	NUTEK, Energy Star	MPR II, Energy Star	NUTEK, Energy Star	NUTEK, TCO 92, Energy Star	TCO 95, Energy Star
Contact	1-800-567-1616	1-800-800-5202	1-800-465-7999	1-888-542-2623	1-800-366-0476	1-800-961-7669	1-888-843-6889
Internet contact	www.compaq.ca	www.eizo.com	www.can.ibm.com	www.lgeus.com	www.nec.com	www.sony.ca	www.ttxmonitor.com
Warranty (parts, labor)	3,1	3,3	3,3	3,3	3,3	3,3	3,3
Price	$772 SRP	$1,099 street	$1,140 SRP	$859 SRP	$779 street	$1,099 street	$789 street

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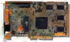

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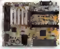

P2XBL/D

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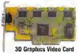
- **Dual Processor architecture** with Intel® 440BX chipset
- Targets CAD/CAM, desktop publishing and server markets



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NetWare 5

bodes well for Novell

by Stephen Ibaraki

Product: *NetWare 5 (beta)*
Vendor: *Novell Inc.*
Comments: *Technically strong, with Java emphasis.*
Rating: *A*

Novell is a dominant player in the networking arena, but has taken some buffeting in the last two years from Microsoft's pervasive NT product line. Now Novell is fighting back with new products, new directions, and a new CEO, Dr. Eric Schmidt. The changes in focus and strategies are significant and bode well for this company. Any new products from Novell are worth at least a trial run due to continued strong market presence and technical excellence.

Especially significant is the summer release of a new operating system: NetWare 5. The product represents a significant shift technically with a strong emphasis on Java.

How different is NetWare 5? The changes are evident when you first install it. The procedure is smoother, simpler and includes a Java-based GUI interface.

After the initial text-based copy phases, a GUI screen asks for the server name. File-system configuration screens follow and there's a hint at one of the major enhancements — Novell's new 64-bit indexed storage system, called Novell Storage Services (NSS). NSS provides for billions of volumes and directories, up to eight terabyte file sizes while using very little memory. Another feature is fast volume remounting measured in seconds for any size volume — a three terabyte volume was crashed and recovered in 10 seconds at Comdex/Fall '97.

Next, the user is given a screen to configure protocols. Again, there's a change from earlier versions of NetWare: with NetWare 5, one can configure for pure IP (that is, without IPX-based encapsulation), and/or IPX. IP would be the preferred configuration for many companies today due to Internet/intranet use and the management and bandwidth advantages of employing a single protocol.

The protocol screen is simply laid out and very easy to configure with two check boxes — one for IP and the other for IPX. If one checks IP, there are additional fields for IP address, subnet mask and router address. With NetWare 5's compatibility mode, the user can run IPX-dependent applications in an IP-only environment. There is also the ability to transparently link IP and IPX network segments.

In addition, there is support for Service Location Protocol or SLP. SLP is an industry-standard Internet protocol allowing plug-and-play style network services in a pure IP environment. With SLP, network resources automatically register their services with a Directory Agent. Clients can gather service location information by contacting the Directory Agent.

The installation screens that follow allow time zone setup, licensing set-up, configuring the Novell Directory Services (NDS) tree, server and administrator

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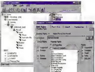
placement (context) within the tree, and providing an administrator password.

The final series of screens display additional enhancements in NetWare 5. Here, the user can set up and customize the products and services they wish to use. The list reads like a wish list for any network administrator. A very basic setup would include:

1. Novell Distributed Print Services (NDPS): Unlike prior versions of NetWare, users manage printing resources using one NDPS printer object, and not by using different utilities with three different objects. NDPS provides for intelligent bi-directional communication between users, printers and administrators allowing network users to easily locate network printers and obtain information on printer capabilities and printer/job status. NDPS features automatic driver download, automatic printer discovery, configuration and a single point of administration of all network printers under Novell's network administration tool, NetWare Administrator.



ConsoleOne screen

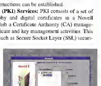
2. Novell Directory Services (NDS) Catalog Services: A Catalog Dredger enables administrators to access data from the NDS and place that data into a Catalog Database. The database contains a snapshot of the information captured from NDS. Administrators or authorized users can define their own view of NetWare Directory Services that will be stored in the Catalog. This provides fast queries on data within the catalog, sorting the catalog and finding relationships among the data.

3. WAN Traffic Manager (WTM) Services: WTM is a policy-based tool that is used for the management of the cost and congestion of WAN traffic. Using a policy valuator, WTM checks administrator policies to determine whether WAN traffic will proceed or be delayed.

4. Secure Authentication Services (SAS) including Secure Socket Layer (SSL): SAS provides for the support of new and evolving authentication systems including third-party authentication services. Server-based user applications can have controlled access to files and NDS objects based on the user's SAS authentication. Using the SAS API set, encrypted SSL connections can be established.

5. Novell Public Key Infrastructure (PKI) Services: PKI consists of a set of services that uses public key cryptography and digital certificates in a Novell NetWare system. Administrators can establish a Certificate Authority (CA) management domain within NDS to perform certificate and key management activities. This enables certificate-based security services such as Secure Socket Layer (SSL) security for LDAP servers.

6. ZENworks (Zero Effort Networking) Starter Pack: ZENworks is Novell's desktop management tool suite to ease workstation administration tasks such as application management, software distribution, software installation, desktop management, maintenance, and remote diagnostics and repair. NetWare 5 ships with the ZENworks Starter Pack, which includes Novell Application Launcher (NAL) & Workstation Manager.



IP and IPX protocol selection

After installation is completed, up pops ConsoleOne on the server screen. It runs on the Java Virtual Machine that's automatically activated in NetWare 5. This GUI-based network management interface is a nice touch versus the text-based screens on prior NetWare versions. For example, clicking Tools allows one to select "Performance Monitor," which provides a graphical representation of CPU and memory usage. Right-click a file on any volume and then select from options such as Edit, Delete, Rename, Cut, Copy, Paste, and New Folder. One can click through "Entire

Novell's Schmidt outlines corporate strategy

An interview with Eric Schmidt, chairman of the board and chief executive officer for Novell Inc.

by Stephen Ibaraki

Eric Schmidt joined Novell in April 1997 from Sun Microsystems Inc., where he was chief technology officer and corporate executive officer.

In his 14 years at Sun, Schmidt held a range of progressively more responsible executive positions in which he earned international recognition as an Internet pioneer. He was also instrumental in the widespread acceptance of Java, Sun's platform-independent programming language.

Prior to joining Sun, Schmidt was a member of the research staff at the Computer Science Lab at Xerox Palo Alto Research Center (PARC). He also held positions at Bell Laboratories and Zilog.

Schmidt has a bachelor's degree in electrical engineering from Princeton University, a master's degree in electrical engineering and a Ph.D. in computer science from the University of California at Berkeley.

Eric Schmidt

CCW: How have you reshaped the company and what changes do you plan in the short term and long term?

Schmidt: When I joined Novell in April 1997, I had three main goals. First, we needed to align our business with the needs of our customers and the realities of the market-place. Second, we needed to focus our resources in our areas of strength.

Third, we needed to execute on our plans and deliver a series of great new products in an accelerated time frame.

A year later we are right on track in all these areas. We've listened closely to our customers and partners and aligned our business to better meet their needs. We've become a much more efficient and focused company with a greater sense of urgency and fewer levels of management. We're shipping great new products like BorderManager, FastCache, NDS for NT, GroupWise 5.2 and soon NetWare 5 that extend the capabilities of our installed base while attracting new customers. We've made Novell relevant again.

CCW: Your educational programs (CNI/CII/CNE/CIP/CNA) are the models for the industry and many other companies have adopted similar programs. But there's been a significant shift to other designations from competing companies. What triggered this shift? How committed is your company to supporting your education channels?

Schmidt: Our commitment to our education channels is stronger than ever. We continue to be the leader in the quality of education we offer, the number of courses available worldwide, and the number of people we certify. NT, remember, is a relatively new phenomenon, so we expect to see some fast growth in NT training and a move toward dual certification by many networking professionals. We are taking advantage of this trend with new Internet certification and multi-vendor integration courses that are helping us certify thousands of new people every month. We're also looking at new forms of on-line training to help people prepare for their certifications at home or at the office. In addition, we're

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Network" and create, edit and manage objects in the NDS tree. This is quite significant since these operations could only be done at the client on prior versions of NetWare.

Code-named "Houston" during development, ConsoleOne can be run on any networked machine that has a "Java Virtual Machine," and provides a single point of control in which all products can integrate. For example, data previously only accessed through the server console or from a networked client will now be available from ConsoleOne.

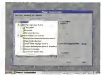
This is especially useful when working on the server console. These management tasks can be organized into customized views. This allows for easier delegation of administration to others. One can include or exclude specific sets of features (using snap-in components) to match the tasks you want other administrators to perform. One view may include User Administration while another may provide Server Management and Printer Management. NDS trees are typically organized into containers (contexts) for localized administration.

> "NT's main attraction for corporate users, is it allows for the seamless integration between CAD/CAM solutions in the production process, and the data files contained in non-production applications in the organization such as word processing, accounting and spreadsheets."

For example, if a customer has three departments, you could create three container objects, one for each department. Users and their resources are represented as objects within their containers. ConsoleOne allows for a view that includes all objects but is restricted by the context. The possibilities are endless and the ConsoleOne concept has tremendous potential for the future.

For those who are still running NetWare 3.x servers, NetWare 5 provides a Novell Upgrade Wizard. The wizard will upgrade the 3.x object database (bindery) and volume contents, printers and queues from anywhere on the network. The system will check for conflicts and provide options for resolving these problems before the upgrade begins.

One of the annoyances in older versions of NetWare was in providing the location (context) for one's User object when logging into the network. A nice feature in NetWare 5 is Contextless Login. Contextless Login locates the corresponding context in a catalog and automatically inserts the context into the login's context field.



Selecting products and services

Novell Directory Services (NDS) has been the key strength in Novell's product line, with its ability to represent all network accounts and resources as objects organized within containers in a tree structure. No matter how large the company, the NDS architecture easily expands to accommodate the network structure. It continues to be the foundation for NetWare 5 but with many enhancements. NetWare 5 incorporates NDS catalog services for easier access to names, LDAP v3 access and WAN Traffic Manager to allow the administrator to determine how often NDS should send changes over the WAN link.

With NDS Transitive Synchronization, each server in a replica list no longer has to synchronize with all other servers in that replica list and changes made on a replica can be synchronized to other replicas via intermediaries. These features provide for much-improved performance and management of directory services across wide-area networks.

In addition, it's possible to audit a user's access with the Audit System Management of the audit files is simplified under NDS since they are represented as NDS objects.

giving our CNEs a head start on NetWare 5 by offering training in advance of the first customer shipments.

CCW: What changes will be made to foster and encourage your channel partner relationships?

Schmidt: Our network of more than 25,000 channel partners is another great asset that sets Novell apart from the pack. We've increased membership at every level of our reseller programs over the past year, and in 1998 we're rolling out a range of new programs under the umbrella of our PartnerNet Program. Getting to know our partners better has helped us tailor our programs for the distinct audiences in our channel: account executives, system engineers and the owners and manager of reseller organizations.

We're also addressing the different needs of resellers with different sales models, some of whom are more focused on selling hardware and software and others more focused on consulting and support services. The end result is the industry's most knowledgeable and professional channel, offering our customers the most comprehensive range of sales, support, integration and services.

CCW: In which directions do you see your company moving to support the developer community and to provide a return on their investment?

Schmidt: We've intensified our efforts to give developers the unified set of tools and APIs they need to create Java applications enabled by NDS and our complete family of network services. We call this development environment for directory-enabled applications our Open Solutions Architecture. We're already partnering with large developers like Cheyenne, IBM, Oracle and

Netscape to deliver directory-enabled solutions for NetWare. And we're partnering with companies like Metroworks to bring top development tools like Code Warrior to the NetWare 5 platform. We also recently announced a $50 million Internet Development Fund that is making first and second stage investments in leading edge companies that are developing Java related software for network servers.

CCW: With NetWare 4.x, your company began to be buffeted by the market place. How do you explain this buffeting or downturn?

Schmidt: We are not seeing any downturn. We're selling more server platforms licences than ever at Novell, with NetWare 4 now accounting for the majority of platform sales. As we communicate the advantages of Novell Directory Services and directory-enabled solutions, we're seeing more upgrades from earlier NetWare versions. It's all part of Novell's transition from a file and print services vendor to the leading vendor of server platforms for running intelligent network solutions.

CCW: How will 5.x be targeted and marketed? If 3.x or 4.x is doing the job, why move to 5.x?

Schmidt: NetWare 5 fully takes the Novell network platform to open Internet standards. With NetWare 5, we will expand the acceptance of our platform by both business network users and Internet Services Providers.

CCW: How do you foresee the evolution of the Internet to being an "intelligent" network? What role will Novell take in this evolution or perhaps revolution?

Schmidt: The new face of networking has a human face, and this underlying philosophy will color everything we will do in the coming years at Novell.

NDS and directory enabled solutions will give a user the ability to have one digital identity for all network resources. This digital persona will not be tied to the user's desktop. It will be kept on the network, where regardless of what desktop you are on and where you sit, you are ensured the same view and access to your applications and resources. NDS is already offering these capabilities on many of our customers' intranets and extranets, along with the ability to efficiently manage individual user profiles from a single location and log-in.

CCW: Novell is in a unique position to monitor the trends in the market place. Can you provide a forecast five, 10 or 20 years into the future?

Schmidt: Not without a few hundred pages! But I see every indication, for the foreseeable future, that business and technology around networking and the Internet will continue to grow at a rapid rate. The immediate challenge is to give users proximity to these new services, applications and data, and to help customers use the available bandwidth more efficiently. To meet these challenges, businesses will need directory-enabled network services and network based technologies

For computers to communicate with each other using the TCP/IP protocol, they need IP addresses. The Domain Name System (DNS) resolves names such as triton.capcollege.bc.ca to the network devices' IP address. The Dynamic Host Configuration Protocol (DHCP) automatically assigns IP addresses to network devices. To provide ease of administration, NetWare 5 allows the user to configure and manage the DNS and DHCP services in NDS using a Java-based management application. Dynamic updates of host names with changing IP addresses are also supported using Dynamic DNS (DDNS).

There have been substantive changes in the C-based operating system kernel, which now contains very little assembler code. The Java engine with its kernel links results in high-performance benchmarks. There is support for uniprocessor and full symmetric processing on multiprocessor systems. A new application preemption function allows for the prioritization of applications running on the server. There is memory protection for added fault tolerance, virtual memory for increased performance and an integrated debugger. Combined with the new file system, the server-side performance of NetWare 5 will be hard to beat.

Main Menu
Tool Bar
View
Status Bar
Object Browser

ConsoleOne screen

NetWare 5 also includes two products, Netscape's award-winning FastTrack Server and Oracle's Oracle8.

The FastTrack Web-server software is designed for individuals and workgroups to deploy intranet solutions quickly. Most companies will want to upgrade to Enterprise Server. The transition is straight-forward, since both products share common features.

The five-user version of Oracle8 bundled with NetWare 5 provides an application platform for immediately developing and deploying network computing solutions — including Java applications.

NetWare 5's new back-up utility features protocol-independence, much needed scheduling capabilities, Windows 95-based GUI, autoloader support and centralized management using NDS.

In Novell's attempt to attract developers, NetWare 5 fully exposes its network services through a complete set of APIs. Using Java, developers can write object-oriented, multi-threaded and dynamically linked applications. Also, NetWare 5 includes and supports the Common Object Request Broker Architecture (CORBA) ORB, VBScript-compatible NetBasic interpreter, JavaBeans for NetWare, JavaScript and Perl 5.

Novell is gambling that this is the right mix of technologies to take the company into the 21st century. As a reviewer, I'm impressed with the direction the company has taken and would recommend NetWare 5 without hesitation. Novell has succeeded in replicating the performance and plug-and-play features in IPX into their TCP/IP platform. The company has maintained full support for legacy customers while providing full compatibility, interoperability and upgrade capability with TCP/IP. Novell's directory service, NDS, continues to lead the market in scalability, ease-of-use, single-point-of-administration and cross-platform support. With NDS for NT, and adoption of ADSI (Microsoft's interface for Active Directory), Novell realizes that to keep leadership, it must embrace and support competing technologies. Under the direction of Eric Schmidt, the company has placed a major emphasis on Java to augment the NetWare Loadable Module (NLM) architecture, which is showing its age. The question here is: will Java really take off/take hold soon enough for Novell? CCW

Stephen Ibaraki is a teacher, researcher and coordinator at Capilano College, and can be reached at sibaraki@capcollege.bc.ca. The college and its faculty have ACE, CAFCE, CIPS, Microsoft, Novell, IBM and Intel partnerships and certifications.

like Java that can be distributed across the network.

CCW: What forces led your company to collaboration with Oracle?

Schmidt: Novell and Oracle continue to deliver the most manageable, scalable and top-performing database solution available for a broad range of applications. Integration of Oracle8 with NDS makes it easy for customers to manage database access and the entire network from a single location and login. Novell and Oracle are also moving toward server-based Java applications together, putting infrastructure in place to a support a new generation of object based solutions.

CCW: Some say Java is becoming fragmented — perhaps impossible to control. And yet your company has embraced it to where you've taken a point position. Where do you see Java going in the short term and in the long term?

Schmidt: There is strong consensus on Java from the vendors making the strongest commitments — Novell, Sun, IBM, Oracle, Netscape and thousands of smaller ISVs. Microsoft's direction is desktop centric and carries no risk for Novell because our focus is on deploying Java on middle-tier servers. Arguments about the Java brand are not nearly so important as the new value that the Java technology delivers for developing and deploying network applications. IBM is dedicating over 2,700 people to Java development, and Java projects are underway at approximately two-thirds of all larger corporations. Novell is committed to Java for only one reason: because it will make networks work better for our customers.

CCW: How do you uniquely differentiate your company, its products and its current market position?

Schmidt: Our goal is to become the global leader in Internet software. Novell products make possible completely new classes of activities and categories of applications over intelligent, interconnected networks. CCW

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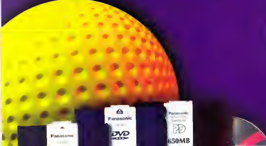
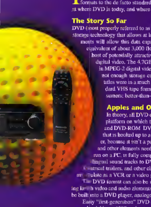
Year Three: Driving Towards


Panasonic
Panasonic
DVD
Panasonic
PD
650MB

the Mainstream

by Jeff Evans

It seems 1998 is destined to be the year when DVD technology went from a promising new medium to a vigorous, medium-sized market And 1999 seems likely to be the year when it will go from one among many new storage formats to the de facto standard for high-capacity data storage and multimedia playback In this article, we'll look at where DVD is today, and where the main opportunities are for it in the next year-and-a-half.



The Story So Far

DVD (most properly referred to as Digital Versatile Disk, but also widely known as Digital Video Disk), is an optical storage technology that allows at least 4.7GB of digital information to be stored on a CD-sized disk (future enhancements will allow this data capacity to be expanded several times, over the next decade). Of note, 4.7GB is the equivalent of about 3,000 floppy disks, or about seven CD-ROM disks. This multi-gigabyte capacity enables a host of potentially attractive new applications to be developed using the DVD medium. The most obvious is digital video. The 4.7GB storage capacity can hold an extremely high-resolution, high-quality feature film in MPEG-2 digital video format on a single DVD disk. With the older, 650MB CD-ROM format, there was not enough storage capacity to store a full-length movie in high-quality video format. CD-ROM video titles were in a much lower resolution, blurry MPEG 1 format, and offered little advantage over the standard VHS tape format. DVD, by contrast, offers a premium viewing and listening experience for consumers: better-than-laser-disk imagery, with theatre-quality Dolby sound.

Apples and Oranges

In theory, all DVD disks are created equal, but in practice there are important differences, based on the platform on which they're being played. One distinction made between DVD varieties is DVD-Video and DVD-ROM DVD-Video can be played on either a PC-based DVD drive, or a DVD player, the kind that is hooked up to a TV set and resembles a VCR. DVD-ROM titles aren't of much use to a DVD player, because it isn't a personal computer — it doesn't have the operating system, mouse, keyboard, RAM and other elements needed to run Windows or Mac software. Given that limitation, the DVD format, when run on a PC, is fully compatible with any kind of interactive multimedia authoring. It's possible to add multilingual sound tracks to DVD movie titles, plus special, extra "director's cut" footage, documentary footage, theatrical trailers, and other cinema-lover's treats. DVD control utilities make the interactive elements as easy to manipulate as a VCR or a video game

The DVD format can also be used for awesome 2D and 3D-interactive games and educational titles, incorporating lavish video and audio elements. DVD drives can be incorporated into PCs, as a kind of "super CD-ROM," or can be built into a DVD player, analogous to a VCR or laser disk player.

Early "first-generation" DVD drives and stand-alone players began to ship in very small volumes in 1996. Sales jumped quickly in 1997 and are expected to climb sharply throughout 1998. Nevertheless, retail computer dealers found that the new DVD technology, particularly that which was offered on PCs, suffered from many of the usual teething troubles of new technologies. It is only as these limitations are overcome that DVD will reach its potential as a nearly universal storage and playback technology

Still Bugs in the System

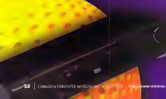
The first generation of DVD drives made for PCs in 1997 were expensive (around $700 to $900), had many unresolved compatibility issues with CD-ROM and CD-R formats, were difficult and time-consuming for either a reseller or an end-user to [illegible], often had no video output to a TV set, and had a very small library of DVD software titles available to play on them

Whereas early DVD drives required a high-performance MPEG2 decompression card to handle the processing load of decompressing and playing full-screen, high-quality digital video, the increase in personal computer CPU power over the last two years has meant that current PCs don't need the expensive decompression hardware anymore. Software MPEG 2 decompression utilities, offered by companies like ATI, will do the trick. As well, current MPEG 2 playback software has smoothing routines that make the video playback beautiful to watch, without the former problems of [illegible] and pixelization. The elimination of decompression hardware, and increasing economies of scale, has reduced the prices of bare bones DVD drives to as little as $220.

Installation also became easier, and DVD drives simply don't make it to market anymore, unless they support multiple video output formats (typically RGB for computer, NTSC composite (TV frequency) and S-video. Also, the number of DVD titles is as high as 8,000 at time of writing, and growing.

All Over But the Shouting?

Resellers can't declare victory and bury the venerable 650MB CD-ROM drive just yet, however. The CD-ROM drive will remain the standard on the existing installed base of multimedia PCs sold before 1998 Most of these older PCs are not natively powerful enough to play back MPEG-2 movies without an expensive decompression card. There will be a certain market for DVD upgrade kits with hardware decompression from companies such as Creative Labs, but that market will represent only a small percentage of users of older PCs. For the future, though, consumer desktop PCs based on Intel 300MHz and faster processors will contain a significant percentage of DVD drives. In the business market, DVD drives are not likely to appear in quantity in the foreseeable future, except in specialized applications such as training, sales, presentation and archiving But quality needs to be addressed on DVD software, as well as on video and audio peripherals — such as monitors, TVs and stereo audio systems Much DVD software is still what used to be called "shovelware" in the early days of CD-ROM· material simply dumped down onto disk without necessarily showing much concern for quality or creativity.



The Copying and Copyright Conundrum

Copyright owners of films were highly resistant to putting their movie libraries out on the market in high-resolution DVD format, because it would make it very easy to tape first-rate copies onto home VCRs. To counter this, a sophisticated range of copyright enforcement technologies are incorporated into all DVD drives. These include geographic zone settings on drives, to ensure that disks from one international movie licensing region can't be smuggled and played on a drive in another region. Also, DVD data is encrypted, and can't be decrypted if it has an incompatible encryption key. As well, DVD players and disks use a technology called the Copy Generation and Management System (CGMS) which varies the brightness of an unauthorized copy of a DVD movie on a VCR, making it unpleasant to watch There are actually a number of ways to get around CGMS, particularly with a video-compatible PC (using a TBC or Time Base Corrector card, for example), but for all practical purposes, the copy-protection schemes on the DVD players and DVD-ROM disks make it more trouble than it is worth for consumers.

A truly obnoxious and intrusive DVD copyright protection and royalty payment scheme called Div-X (promoted by a Hollywood copyright lawyer) seems to have died a well-deserved death. Div-X would have essentially rented DVD movies to their purchasers, requiring that a royalty payment be made on each viewing, via a modem connection to the payment collection service from the DVD player or PC A better way to strangle the growth of the DVD medium would be hard to imagine

Next Generetions

DVD technology has the potential to evolve in the coming years to accommodate up to 17GB of storage in a double-sided, double-layer format, while being backwards-compatible to older DVD and CD-ROM formats. As well, affordable, rewriteable DVD drives (DVD-R or DVD-RAM) are another major objective of DVD research. Also in the future is a strong library of DVD software titles in categories other than movies. DVD offers great potential as a mass-archiving medium, and for interactive training and learning programs, and for all kinds of games. As the installed base of DVD drives in PCs grows, more developers will risk the investment in the kind of creative product development for which DVD has potential.

Opportunities for Resellers

DVD is still not always an easy sale Despite the existence of excellent second-generation DVD upgrade kits such as the Creative Labs PC-DVD Encore Dxr2, there is still resistance to DVD as a mysterious and expensive new toy. Many consumers still need to be educated about the great audio and video features that differentiate DVD from CD-ROM. Due to the extra price and complexity, DVD is not yet an automatic choice for new PC buyers Many resellers need to be able to show the advantages of DVD, and this often requires non-standard demonstration equipment such as a home-theatre-style large TV and a good sound system

However, if resellers do their homework on merchandising and selling the DVD technology, it is possible to upsell a worthwhile segment of your customers to the DVD experience This opens the door for the sale of high-quality, large-format monitors, plus audio systems, and the beginning of the customer's DVD library.

For more information on the PC-DVD Encore Dxr2, contact, *http //www.soundblaser.com.*

Jeff Evans is Associate Editor of Canadian Computer Wholesaler. He can be reached at jeff@tcpon.com.

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Opportunity, overkill or necessary evil

by Paul Weinberg

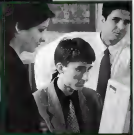
Resellers get hit upon regularly by a host of suitors

"Every vendor wants a piece of what we do," reports Roger Vanderbeek, president of the LAN Shoppe Inc in Toronto, whose network business is the target of high-end and specialized vendors seeking attractive new channel partners "We get all the router, switch and hub manufacturers Everybody wants us to exclusively sell their product, which isn't practical for us to do"

The LAN Shoppe sells and supports products from Tier One vendors in net working It is a highly technical, nine-person operation, with the owning partners personally taking all the courses required by their suppliers to ensure they are up to speed on the latest versions of their core offerings Vanderbeek recently spent a weekend in Whistler, B.C, with other Bay Network VARs for a session that included training and a certification test "It's not just a cake walk," he says

But he doesn't mind because the course is brief and on the weekend "Everything is organized for you and you don't have to take time off work"

But there are other vendor programs, geared for the already qualified technicians, that can be a complete waste of time, says Vanderbeek. "A lot of the training courses that we have attended in the past have been marketing fluff things — 'Rah, rah, ours is the best and here's why' I don't care about that. I just want to know technically how to install, and support [a new product.]"



Vendors understandably want their channel partners as qualified and up-to-date on their products and technologies as possible That generally involves continuous training and certification of the VAR's technical staff, often on an annual basis But a small reseller operation cannot always afford to have its specialists continuously offsite in a classroom, instead of serving and billing clients Also, the fees for the courses range from $200 to $700 per day, although in some cases vendors will reimburse leading resellers through co-op advertising programs and other initiatives

Some forms of training involve experimentation where the vendor allows certain resellers to tinker with new equipment on their own premises and become more familiar with it "I would say the guys learn far more valuable information by simply playing with the equipment and testing it out, whether it is in-house or on a client's site in a real environment rather than a non-real world classroom," says Vanderbeek.

The rule of thumb for the LAN Shoppe is that it has no difficulty having its technical staff immersed for a week at a time in courses for products that are critical to its success. But generally speaking, this reseller prefers short half- or whole-day training sessions for most other items.

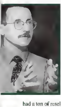
"Whomever comes up with the easiest training program or the one that we can fit into our schedule is typically the one we are going to recommend," says Vanderbeek.

On the other hand, resellers cannot afford to be totally exclusionary, says Albert Daoust, director of special projects at Toronto-based Evans Research Corp. "It is simply very difficult to sell one line of servers, or just one network operating system. So you invariably are getting some low volume lines, where the time and expense of training starts to look onerous."

Enormous training expenses start looking like an albatross around a manufacturer's neck when products start to falter in the market-place.

Apple faced that scenario, adds Daoust, when some of its resellers realized it made no financial sense to keep up with this vendor's certification requirements. "That is why some products fall out of favor very quickly."

Leading vendors, including Microsoft, IBM and Cisco have sought to alleviate the time pressures on the VAR technical staff with the alternative option of computer-based training, which employees can do on their own time. That has come to be known as "incidental" learning in the industry. IDC Canada predicts in a recent study that the split between instructor-led courses and computer-based training will be roughly 50 50 after the year 2000.



Classroom instruction is most valuable in the initial certification, says Curt Skene, training and certification program manager at Microsoft Canada. "I suggest especially with someone coming in for the first time [that] finding a good grasp of these skills, the interaction of being in a class working with the instructor and other classmates is the strongest approach."

Microsoft has made it generally mandatory that its certified specialists on various products, including NT, upgrade their skills annually at one of its authorized third-party training facilities in a five-day course. However, it recently loosened the rules somewhat for those with recognized expertise in the competing NetWare network operating system. "We had a ton of resellers saying 'I really don't want to tie them up for five days. This person is a CNE (certified Novell engineer). He's been living the network for three years. And you are going to hold him hostage for five days,'" says Skene.

Another way to handle expenses is to have training conducted on a staggered basis, says Paul Maasland, president of the Toronto-based Daedalian Networking Services. A larger 200-person operation, it will have the more junior technical employees re-certified first for newer offerings while more experienced people with older certifications remain responsible for previous product lines.

Extensive training cements the exclusive relationship that the vendor has with its resellers. It can lead to situations where resellers can only afford to sell and support certain products. "Once you spend your wad on a particular vendor you are a lot less likely to be floating around," says Vanderbeek.

Resellers are "stuck," at a time when the trend in the computer industry is towards greater openness and flexibility, says Keith Ellis, vice-president of services research for the International Data Corp. (Canada) Ltd. On the one side are the major vendors expecting a lot from their business partners in return for an exclusive relationship. At the same time, end-users are demanding access to a broad line of offerings in areas like networks, databases and the Internet.

Kingston, Ont.-based consultant Bob Pritchard argues that non-vendor standard requirements for specific technical skills in the computer industry might be preferable and would get around this conundrum. Some training companies have done a fair amount of work establishing such certification, but "it is pretty new and not widely recognized."

Standardization makes a lot of sense in Web solutions where vendors come and go, says Bill Brown, director of product development at a Toronto training company, CDI Education Corp. But, he adds, in non-vendor certification for any product area the instruction process might be more costly and time consuming since it entails a broader knowledge of a technology.

"Kingston, Ont.-based consultant Bob Pritchard argues that a non-vendor standard requirement for specific technical skills in the computer industry might be preferable."

The response from the vendors is mixed. Liz Rome, IBM Canada's program manager for PC partner skills, seems open to idea of standard certification.

"That is a very interesting question. Certainly something to think about. I haven't thought about it before from that depth."

But Brent Rebus, Canadian channel operations manager for Cisco Systems sounds more skeptical. He states that his company's certification programs for the design and installation of Cisco products are already "recognized" at the public and post-secondary education level for establishing basic networking competence.

In turn, Daoust defends the vendors for their strict certification requirements, suggesting they are "entitled" to have people who can install their products in a professional manner. Also, he adds, PC manufacturers, in particular, invest heavily in technical support, even if the desktop business is not especially profitable at the moment. He adds that a reseller specializing in Novell, for instance, is able to distinguish itself from the competition with certification that is both "hard and expensive."

Paul Weinberg is a Toronto-area journalist who specializes in high technology. He can be reached at pweinbg@interlog.com.

ASIASCAPE

from Newsbytes

Samsung will mass-produce small DRAMs

Samsung Electronics Co Ltd has announced the start of mass-production of DRAM (dynamic random access memory) chips based on the micro ball grid array (BGA) package

The new chips are around 30 per cent smaller than existing chips, said Samsung

Until now, mass produced chips have been encased in plastic because the micro BGA devices required special processing explained Samsung

The new chips can be used as replacements for existing devices, including both centre and edge-pad chips Compatibility with centre-pad chips makes them easier to integrate into communications handsets which will also benefit from the reduction in size and weight.

Samsung said it expects to see the chips used in a wide variety of handheld communications and computing devices

NEC intros light SVGA projector

NEC Visual Systems has introduced the MultiSync LT80, which it claims is the worlds lightest and brightest portable SVGA projector, weighing in at less than 4 5 kg

The projector incorporates advanced single-chip digital light processing display technology and is suited for travelling business professionals who are often called upon to give presentations

The LT80 offers compatibility with 640 by 480 (VGA), 800 by 600 (SVGA), 832 by 624 (Mac), 1,024 by 768 (XGA), and 1 152 by 870 (Mac) pixels, using NEC's AccuBlend intelligent pixel blending technology

The projector is extremely compact, measuring just 20 4 by 26 8 by 8 5 cm For international travellers the projector offers a universal power supply and accepts PAL, NTSC, NTSC 4 43 and SECAM signals.

Fujitsu, Nihon Sun, and user group promote Java technology

Fujitsu Ltd , Nihon Sun Microsystems and the Leading edge Systems Users Group (LS-KEN) have agreed to cooperate in the development of systems including mission critical systems, using Java computing technology

The companies will undertake activities such as case-study groups, joint forums and technology exchange meetings to promote the use of Java to members of the Leading edge Systems Users Group, which includes more than 300 corporate users

Some of the corporate members of the user group will also advise Fujitsu and Sun on corporate systems development and operational requirements from the users point of view

Lucent establishes Bell Labs technical centre in China

Lucent Technologies has established a new US$25 million Asia Pacific Communications Software Regional Technical Centre (RTC) in Beijing

The centre will concentrate on development of software for operation and management of communications products and network for the Chinese market

It will be headed by Dr Tse Lin Wang, research and development vice-president of Bell Labs China "We plan to have this RTC grow into a global centre of excellence for research and development activities," said Wang

The statement was echoed by Dr Carl Hsu, communications software acting group president, "We envision the RTC will become one of the major research and development centres of communications software in the world, with a focus on the Asian/Pacific markets "

Lucent will invest (about US$25 million) in the development of communications software at the centre in the next three years

CHINA MARKET
MOFTEC

CA ships Japanese version of Unicenter

Computer Associates International Inc is shipping a Japanese version of its Unicenter TNG enterprise management software

With localized menus and support for the Japanese double-byte character set the new software is already attracting customers, said Computer Associates Among them is Sega Enterprises, which is using the system to manage its amusement facilities/shop management system and Nippon Steel Information & Communication Systems Inc which said it will deploy the system as its core system management solution

- CA has given its Japanese clients the ability to gain and maintain control over their companies' total computing environment in a powerful, simple and intuitive way said Chua Tock Ling, CA senior vice-president and general manager, in a company statement.
- Unicenter TNG Japanese Version is intended to help Japanese customers reduce their total cost of ownership — which is key to surviving and prospering in today's highly competitive global market-place.

Chinese trading site a big hit

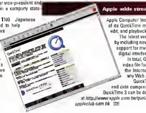
A new Web site launched by China's Ministry of Foreign Trade and Economic Cooperation (MOFTEC) is intended to promote commerce with the country It received more than half-a-million visits in its first week on-line, according to the Xinhua news service

The new China Market Web site promotes Chinese goods and products in six major sectors electronics and machinery, textiles, light industry and crafts, foodstuffs, native produce and animal by-products, hardware, minerals, and chemicals, medicine and nutritional products

The report, quoted MOFTEC's China International Electronic Commerce Center director Xing Wai, who said the site, which opened on July 1, had attracted 582,000 visits in its first week on line

China Market is on-line at *http://www chinamarket.com cn*

Apple adds streaming Chinese video to QuickTime



Apple Computer Inc has released simplified and traditional Chinese versions of its QuickTime multimedia program QuickTime 3 allows users to capture edit, and playback a wide variety of digital video and audio content.

The latest version of QuickTime advances video and audio capabilities by including new compression technologies virtual reality integration, and support for more than 150 video effects and 200 MIDI (musical instrument digital interface)-compatible sounds and instruments

In total, QuickTime 3 can play back more than 30 different audio and video file formats and offers real-time streaming of digital content over the Internet, allowing Web surfers to view QuickTime movies from any Web server, without long download delays

QuickTime 3 Pro adds full screen video video and audio editing and data compression for streaming delivery from any Web server

QuickTime 3 can be downloaded free of charge in traditional Chinese (Mac only) at *http://www apple com tw/quicktime*, while simplified Chinese (Mac only) is at *http://www appleclub com hk* CCW

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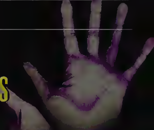


Avoiding the Seven Deadly Sins when Running Your Business

To be successful as a reseller, it is helpful for you to understand where others went wrong

Some resellers do not optimize their profit potential. Or, they have business difficulties Others lose the drive and challenge over time, due to unexpected or prolonged stress.

The reasons for business difficulties or failure are many. The entrepreneur's personal limitations are the primary reasons. This includes, in order of priority: lack of personal qualifications to run a business, lack of experience in the line of business, lack of training, unbalanced experience, a poor business fit and poor decision-making

These limitations lead to:

1. Monay Mismanagement

Money mismanagement is a common reason for business failure. Some of the typical problems small businesses encounter include: insufficient funds to meet startup and operating expense needs, cash flow problems, too much debt, not enough money to grow, charging insufficient to make a profit, inadequate financial planning, poor credit and collection practices, and inadequate bookkeeping. Many entrepreneurs "bleed" the business by taking more money from the business that it can afford. It is important to save some of the earnings as a buffer for unexpected business expenses or to reinvest in the business.

2. Poor Markating

Many entrepreneurs simply don't know who their prospective customers are. They have not done their marketing research — have not identified their market, segmented it, or actively promoted it on an ongoing basis. They may have a great product or service, but if the message does not get out in an effective way to the key target group, the business will suffer accordingly. Preparing and following a realistic and attainable written marketing plan is necessary.

3. Mistaking a Business for a Hobby

Many people enjoy what they are doing, but never consider it more than a hobby. The object of operating a business, of course, is to earn a salary, recover all your expenses and make a profit.

4. Failure to Evaluata Oneself Realistically

The failure to make a frank assessment of personal strengths and weaknesses, needs and desires is a common mistake You may find that your business requires skills that you do not possess, such as goal setting, decision-making and selling. Objective feedback from your family, friends, relatives and business associates is necessary Compensate for weak areas or areas that are of little personal interest by hiring consultants, independent contractors, and employees or bringing in suitable partners.

5. Failure to Set and Revise Goals

by
Douglas Gray

Goals or objectives are not determined, or they are ineffective because they are not measurable, specific, or realistic One should consider optimistic, realistic and pessimistic scenarios. That is the upside potential and downside risks. Preparing a business plan is an essential part of goal setting Failure to reassess goals can create serious problems. Various direct and indirect factors can affect your goals and require them to be modified in order to remain viable and effective. Many problems can be pre-empted by being anticipated as potential risk, with fallback contingency options. This analysis should be done on a regular basis. For example, unexpected problems could occur such as the illness of the owner, new competition, overly ambitious timetables, supplier delays, increase in lending rates, or loss of a major client. Revising goals will ensure your business continues to grow despite unexpected obstacles Reviewing the targets you have met can provide an important sense of accomplishment, self-confidence, and motivation to continue

6. Lack of Competent Professional Advice

Many people select the wrong advisor or don't take advantage of professional advice when they should It is important to have a strong team of experts you can rely on who know your business This includes an experienced business lawyer who can become familiar with your type of business, and a professionally qualified accountant, who is tax-smart. Be sure to deal with a chartered accountant (CA) or certified general accountant (CGA) Comparison check by speaking to various accountants before you decide on whom to rely for advice There can be a considerable range of competence and street-smart experience, so you need to be selective and monitor the quality of the advice as your business needs grow Remember that every business decision involves a legal and tax implication.

7. Lack of Commitment

Personal motivation and desire to stick with the objective, regardless of the normal ups and downs, is essential Some people give up their commitment too easily if the goal is not attained quickly and without difficulty

There are many other factors that can lead to business problems or worse, such as selecting the wrong partner, poor time management, marital or health difficulties and so on. However, the above list covers some of the most common pitfalls to avoid

Douglas Gray, LL.B. is a Vancouver-based expert on small business. Formerly a practising lawyer, he is now a consultant, speaker and author of 16 best-selling books, including The Complete Canadian Small Business Guide (McGraw-Hill Ryerson) and Start and Run a Profitable Consulting Business and Start and Run a Business Using Your Computer(Self-Counsel Press).

AMD's K6-2 Challenges Intel for 3D Performance

by Alan Zisman

Ironically, at almost the same time the U.S. government announced it was investigating chipmaker Intel for monopolistic practices, one of Intel's competitors announced its latest and greatest CPU.

Advanced Micro Devices (*http://www.amd.com*) officially launched its K6-2 processor at Atlanta's Electronic Entertainment Expo, releasing 300MHz and 333MHz models, with plans to boost performance to 350MHz and eventually 400MHz in the third and fourth quarters of the year. (Intel Pentium IIs are already available at 400MHz.) The new product line features a number of enhancements in addition to raw CPU speed.

This chip marks the first time that one of Intel's competitors has gone beyond simply cloning the feature set of an existing Intel product. The K6-2 is the first chip to offer 3DNow, a set of multimedia and 3D enhancements that go well beyond the MMX instructions offered by Intel and current clone-chips. "For the first time AMD has introduced a processor that is differentiated not solely by megahertz or price but by innovative technology that delivers a new level of 3D performance and realism," said S. Atiq Raza, AMD executive vice-president and chief technical officer. The 3DNow instructions will also be available in upcoming chips from Cyrus and Centaur, as well as AMD.

While Intel is working on a similar set of 3D instructions, they will not be compatible with 3DNow. The result is a window of opportunity for Intel's competitors where they will be offering products that are, in this way at least, more advanced than Intel's offerings. But there is a catch — 3DNow, like MMX, only provides improved performance in software written to take advantage of it. Microsoft has promised support for 3DNow in its next-generation DirectX 6.0. As a result, any programs (primarily games) written to use DirectX 6.0 will automatically provide 3DNow support. Software written to take advantage of the OpenGL 1.2 and 3DFx Glide programming specifications will also support 3DNow.

3DNow offers 21 new processor instructions, characterized as Single Instruction Multiple Data, directed at speeding up the interaction between the CPU and a 3D accelerator card, and promising to deliver up to four floating point instructions per clock cycle.

In addition, the K6-2 will, like the newest Pentium II offerings, support motherboards running at 100MHz bus speeds. This results in increased performance across the board, not just for CPU-intensive tasks. Expect performance increases of 15 per cent or more, from a 100MHz motherboard. (Note: best performance at 100MHz, regardless of the CPU, requires faster RAM, which is currently more expensive than RAM that only has to keep up with 66MHz motherboards.)

Like the predecessors from AMD and the other Intel competitors, the K6-2 relies on the Pentium-style Socket 7 design, but the new product will require an updated version, known as the Super7 Platform. Along with the high-speed bus, Super7 designs will support AGP graphics adapters which, until now, were only available in designs based on Intel's Slot 1 for Pentium II and Celeron processors.

Despite the enhancements, AMD's product continues to lag behind Intel's Pentium II line in a number of ways. While AMD claims the K6-2 will benchmark as much as four times as fast as a Pentium II in 3D-intensive operations (with properly written software), and while its integer instructions (used in typical business software) are comparable to the Pentium II's, the K6-2 remains inferior to the Pentium II line in running standard floating-point instructions, lagging behind by as much as 50 per cent on standard benchmark tests.

As a result, many popular games that have not been written to take advantage of the K6-2's new instructions will run better using Intel iron. Even Intel's low-priced Celeron offers all the floating-point power of a full Pentium II (pointed out by reader Art Prufer).

And while, given a 100MHz bus (and high-speed RAM) systems built around either a Pentium II or a K6-2 will access memory at full bus speed, a Pentium II has the speed advantage because it accesses its L2 cache. The cache built onto the Pentium II's cartridge is accessed at half the processor speed — 175MHz for a 350MHz processor. On K6-2 systems, the cache is on the motherboard, and is accessed at the motherboard's speed — 100MHz, regardless of the processor speed. In many cases, the difference in cache speed will result in a noticeable difference in overall system performance.

Recently, a shootout was set up between similarly priced K6-2 and Pentium II systems, comparing performance on a number of cutting edge games, (*http://www.hardwarecentral.com/features/amd/*). Rather than comparing systems with the same speed processors and motherboards, the test team put a 333MHz K6-2 on a 100MHz motherboard up against a 300MHz Pentium II in a 66MHz motherboard — this enabled them to compare systems roughly at the same price-point. (The 100MHz BX motherboard required for the higher-speed Pentium II systems costs about twice as much as the 66MHz LX boards, which are about the same price as the Super7 motherboards.) They used pre-release versions of DirectX 6 and tested games such as the upcoming Quake 2, offering 3DNow Support, as well as others that lacked such support.

Results showed about 10 per cent better performance for the K6-2 when running games (such as Quake 2) offering direct support for its features. When software support was not built into the game, 3DNow still equipped the K6-2 for more or less parity with the Intel system, evidence of the effects of DirectX 6.

AMD believes that it has overcome the production difficulties that have sometimes limited supplies of its processors, all K6-2s are being produced on .25 micron wafers, offering increased yield.

Looking for still more evidence that the market has opened up more fully for Intel's competitors? With HP's announcement that it will ship AMD CPUs in some of its Pavilion-series computers, virtually all of the major brand name computer manufacturers offer one of the non-Intel processors in at least part of their product lines.

And with the K6-2 as the first non-Intel 80x86-type CPU to go beyond Intel's feature set, there's evidence the one-time cloners are no longer content to stay a generation behind Intel. Nor will they aim solely for the bottom end of the market.

Alan Zisman is a computer journalist and teacher, living in Vancouver. He can be reached at azisman@home.com.

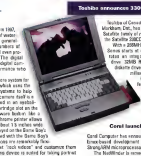
NEW PRODUCTS

A digital camera for $69.95?

With more than two million digital cameras sold in 1997, that product category has finally passed a kind of watershed. Digital photography is now a vigorous and generally accepted imaging medium, used by vast numbers of general consumers, business professionals, and even professional graphic artists and photographers. The digital camera, in short, has arrived. Two recent new digital cameras illustrate the diversity and high price/performance ratio prevailing in the digital camera category.

Nintendo has developed a $69.95 digital camera system for its handheld Game Boy entertainment device, which uses the Game Boy's processing, display and power systems to help keep the cost of the camera system down. The camera itself is a simple digital video CCD chip camera, enclosed in an eyeball-shaped plastic sphere, which plugs into the cartridge slot on the Game Boy unit. The camera has all of its software built-in, like a videogame cartridge. An optional $79.95 monochrome printer allows the user to print images out on paper that is about 1.5 inches wide. Video images are digitized in real time and displayed on the Game Boy's monochrome LED screen. The device is operated with the Game Boy's built-in game control buttons. The software options are remarkably flexible — you can put digitized images into pre-set "rock videos" and customize them with a variety of graphic effects. Essentially, this device is suited for taking portrait shots of people and then manipulating, modifying and animating them in generally humorous and often quite creative ways. The limitations of the system are pretty obvious: monochrome only, low resolution and no way to move files to a personal computer. But in terms of the fun/dollar ratio, it's unbeatable.

See *http://www.nintendo.com*



Toshiba announces 330CDS/CDT

Toshiba of Canada, Information Systems Group (ISG), in Markham, Ont., has added two introductory products to its Satellite family of notebooks — the Satellite 330CDS and the Satellite 330CDT.

With a 266MHz MMX Intel Pentium, the Satellite 330 Series starts at an SRP of $3,459. The series incorporates an integrated 20X maximum speed CD-ROM drive, 32MB RAM expandable to 160MB, a floppy diskette drive and a 3.82GB hard disk drive with a 13-millisecond average access time.

Both the Satellite 330CDS and 330CDT feature a 12.1-inch diagonal display. The 330CDS Satellite offers an enhanced STN Color LCD display.

See *http://www.toshiba.ca*

Coral launches Linux network computer

Corel Computer has announced the release of the NetWinder DM Linux-based development platform, powered by the RISC based StrongARM microprocessor.

The NetWinder is aimed at digital signal processing, manufacturing control or embedded systems applications. It includes 32MB or 64MB SDRAM standard options, 810MB, 2.1GB or 3.2GB hard disk options, 10BaseT and 10/100BaseT connections, a parallel port, serial port and IrDA support. Pricing starts at US$569.

Motorola delivers CPV5300

Motorola Computer Group (MCG) of Canada says it has the first CompactPCI Single Board Computer using Intel's recently announced Intel Pentium II processor mobile module. Motorola's CPV5300, which integrates CompactPCI, is aimed at telecom central office and customer premises equipment, adjunct processors, voice and video communications, computer telephony, interactive voice response, wireless infrastructure and high-end industrial control.

In two CompactPCI slots, the CPV5300 incorporates a 233MHz or 266MHz Pentium II processor, 512K L2 cache, the 440BX chipset and up to 512MB of DIMM memory. The board includes an Ultra-SCSI interface, AGP video featuring the i740 graphics accelerator with 8MB video memory, and optional on-board flash, floppy and hard drives.

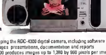
The CPV5300 is priced at US$2,395.

PrimeConfigurator configures custom quotes

PrimaView Inc., a Dallas Internet development firm specializing in database-driven technology, says PrimeConfigurator & PrimeCatalog allow distributors and resellers to automatically configure and instantly quote pricing on custom computer systems as well as computer parts, peripherals and software.

The access interface allows licensed resellers of a company's products to log-on to the site and view the distributor prices on-line. The reseller can then mark up the prices instantly and send them to potential customers. Non-licensed users, on the other hand, will see the retail prices.

Demonstrations are at *http://www4.primaview.com/configurator*



Ricoh has palm-sized megapixel digital camera

C.E.I.D. Corp. of Montreal, is shipping the RDC-4300 digital camera, including software for manipulating images for Web pages, presentations, documentation and reports.

Priced at $1,299, the RDC-4300 produces images up to 1,280 by 960 pixels per image (SXGA). It also features switchable resolution, providing either 1,280 by 960 or 640 by 480 pixels per image.

See *http://www.ceid.com*

Voice translator includes 33 languages

(NB) — LanguageForce Inc.'s Universal Translator Deluxe uses IBM's ViaVoice speech technology software to translate spoken English into 33 different languages. It includes full font and keyboard support, the firm says.

The newly announced, real-world product handles 33 languages. And it lets "English-speaking PC users communicate with the world through their Internet connection, e-mail or fax," says LanguageForce. The firm says its Universal Translator Deluxe is the first omni-directional translator, meaning it can translate from any supported language to any other, for a possible translation combination total of 1,056 language pairs. Some of the 33 available languages are Arabic, Chinese, Japanese, Korean, Spanish, German and Hebrew.

Ian Simpson, CEO of the LanguageForce Inc., says the firm's mission is "one world, one language," and this software is helping to meet that goal.

The product is priced at US$99. It is, of course, highly prone to incorrect grammar translation. However, optional modules for each of the separate languages can improve the translation.

See *http://www.Languageforce.com*

PEOPLE

PC Docs hires former iStar CEO

PC Docs Group International Inc. has formed a new division dedicated exclusively to the development and delivery of Internet software, and Craig Wallace has been appointed as president of this new initiative.

"There is no doubt that we will have a significant advantage over other Internet start ups," said Wallace, in a statement. "Having access to established products, as well as the resources, distribution channel and other benefits of a leading worldwide software organization will enable us to grow at a rapid pace."

Wallace was president and CEO of iStar Internet Inc., which was acquired by PSINet Inc. earlier this year. He also held a variety of management positions at Microsoft Canada.

ConSyGen Inc. appoints CEO

ConSyGen Inc. has appointed Thomas Dreaper as president and CEO.

He has more than 20 years experience in the computer industry, with firms that include IBM and Compaq Computer Corp., in a variety of sales and marketing roles.

Dreaper said, in a statement: "I believe ConSyGen has demonstrated that their automated toolset can correct the Year 2000 problem for many companies."

ConSyGen Inc. is a Phoenix-based software company that provides conversion/correction services. The company's ConSyGen 2000(SM) software is an automated toolset that corrects dates in both source code and data.

LANSource adds sales director

Toronto-based LANSource Technologies Inc. has appointed Larry Price as director of sales, enterprise channel.

Larry Price

LANSource is a developer of network communications software for fax and data applications.

Price will be based in the Kanata, Ont., office, and will be responsible for sales and marketing of network fax and data enterprise software to the federal government. Price previously held senior sales positions with NEC Computer Systems, Dell Computer Corp., Wang Canada Ltd., Harris Corp. and Northern Telecom Ltd.

Reasoning names VP of Canadian sales

Mountain View, Calif.-based Reasoning Inc., a supplier of transformation software and Year 2000 solutions, has named Gerry Graham vice-president of sales for Canada.

Gerry Graham

Graham will be headquartered in Newmarket, Ont., and will report to Reasoning senior vice president of worldwide sales, Tom Doyle.

Graham was previously vice-president of sales for Werner Motor Co. in Toronto. He has also held positions with IBM Canada, Prime Canada, Unitel and Nextra. He holds a bachelor of engineering science from the University of Western Ontario.

Merisel exec wins award

Bill Jones, vice-president of sales for Merisel Canada Inc., was named "Business Partner of the Year" by Campus Retail Canada (CRC), which represents college computer stores throughout the country.

Jones was recognized for support of the alliance and ongoing efforts to secure a presence for campus stores in the computer retail market.

The CRC "Business Partner of the Year" award is presented to an individual "who has made exceptional contributions to the retail education industry." Nominations are based on outstanding service, understanding of the channel and ease of doing business.

Hamilton, Ont.-based Campus Retail Canada (CRC) represents university and college campus computer stores across Canada.

Best Software announces business development manager

Best Software Canada Ltd. has appointed Ted Warning as manager of business development.

His responsibilities include developing the reseller channel for Best products and services in Canada and developing strategic partner relationships with other software companies.

Warning was previously the national sales manager of Toronto-based Magic Solutions International, and has more than 20 years of sales and marketing experience in the technology sector.

Prior to Magic Solutions, Mr. Warning worked with companies such as General Electric and Inmac Inc. ccw

Calendar

Aug. 3-7
International Storage Systems Symposium
San Francisco
Contact: IBM
http://www.training.ibm.com/ibmedu/conf/stor/

Aug. 10-11
Understanding Computer Networks
Montreal
Contact: Global Knowledge Networks
http://am.globalknowledge.com

Aug. 14-15 — Toronto
Sept. 16 — Calgary
Sept. 22 — Vancouver
Oct. 5 — Halifax
Oct. 14 — Montreal
Meriselling '98
http://www.meriselling.com

Aug. 30 - Sept. 3 — Boston
Oct. 11-15 — Orlando
YEAR 2000 Testing, Strategies and Solutions
http://www.dci.com/brochure/y2kbosorl/

Sept. 1-3
eBusiness World
Boston
http://www.dci.com/brochure/ebbos/

Sept. 8-10
Support Services Conference & Expo
San Francisco
http://www.comdex.com

Oct. 5-9
CIIMS Annual Trade Show and Documation Conference
Toronto
Call: (905) 338-9030
http://www.interdoc.ca
http://www.ciims.ca

Nov. 9-10
The CIO Summit
Toronto
Call: (613) 233-9553

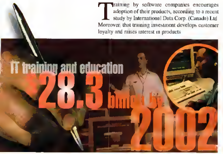
Do you have an upcoming event you'd like to see listed in CCW's Calendar? E-mail: ccw@tcp.ca

Nifty Numbers

Software Training: *Familiarity Breeds Loyalty, says IDC*

by CCW Staff

Training by software companies encourages adoption of their products, according to a recent study by International Data Corp. (Canada) Ltd. Moreover, that training investment develops customer loyalty and raises interest in products.



In *"Leading Software Firms & The IT Training Market,"* IDC found 50 per cent of software firms stated they exclusively use partners to deliver training. A total of 17 per cent of those surveyed said they do not use partners, while the remaining 33 per cent use a hybrid approach of both internal resources and partners to ensure IT training services are delivered to customers.

Almost 94 per cent of software firms surveyed had developed some form of certification program for their channel partners, and 56 per cent of these firms also created similar certification programs for their customers.

IDC says the worldwide IT training and education market is expected to grow 11.1 per cent, surpassing $28.3 billion by 2002. And the related training and testing market is estimated to reach $2.1 billion in 2001.

International Data Corp. (Canada) Ltd., in Toronto, can be reached at (416) 369-0033.

Reader Poll

VOICE YOUR OPINION

This issue:

With high quality printers and digital cameras on the market, businesses and consumers can manage the whole photo process with relative ease, resulting in quality images. But are the technology and the price point really hitting that sweet spot yet?

Which most closely reflects your business?

☐ Consumers are now flocking to purchase digital cameras

☐ Vertical business applications and certain photo enthusiasts are still the most interested shoppers for digital cameras.

☐ Digital photography technology isn't yet mature enough for many customers

☐ Prices on digital cameras are still too high for many customers

Last issue, we asked:

How receptive are your customers to buying computers containing non-Intel CPUs?

You said:

60%	Most of my customers want only Intel based computers
2%	My customers want computers with AMD, Cyrix or IDT microprocessors
21%	My customers weigh the capabilities and price of each chip, and make a well considered decision
17%	My customers are most interested in the price of the systems, and don't worry about the brand of processor

Win FREE software!!

Vote in our Reader Poll! A randomly drawn winner will get a free copy of Microsoft's Office 98 Macintosh Edition software

Congratulations

Congratulations to the winner of the Norton Your Eyes Only, Version 4.1 desktop security software: Roger Charby, at Charby Computer Consultants, in Tillsonburg, Ont.

Log into our Web site: **http://www.ccwmag.com,**
E-mail: ccw@tcp.ca, or send your responses and comments by fax, to **(604) 608-2686**

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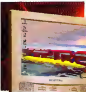
Welcomes you to Comdex Canada '98!
Come by our booth (#830) to:

Play our hockey game for a chance at winning a 24-inch long plush stuffed Brutus (our mascot).

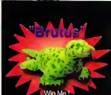
Become a member of Sceptre's CPSP (Canadian Partners Support Program).

Finally and most importantly, check out Sceptre's complete line of award winning CRT monitors and notebook computers, innovative LCD flat panel monitors and affordable high-performance flatbed scanners.



Complete line of LCD flat panel monitors from 12.1 to 18.1 inches
(FT18 shown 18.1", 16.7 million colors, 1280 x 1024 resolution)

Complete line of high performance notebook computers
(S7500 shown 14.1" display, up to PII 300 MHz, 96 MB RAM 6 GB HDD)



S1200 Scanner

Complete line of high performance flatbed color scanners.
(S1200 shown. 600 x 1200 dpi optical resolution, 30-bit color, single pass. cold cathode lamp. One Touch Scanning™, easy to use interface)

Complete line of high performance, high resolution CRT monitors.
(D97A shown: 19" display, 18" viewable, 1600 x 1200 resolution, 175 MHz bandwidth, .22mm horizontal dot pitch, five year warranty, ARRC™)

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